JANUARY 8, 1951 NEWS ISSUE

Electrical World

A McGRAW-HILL PUBLICATION

Ralph J. Cordiner, New President of General Electric Co

Production of Electrical Energy in the U.S., 1902 to 1951 . . . Page 16

What Will New Money Cost? . . . Page 30

AIR-TIGHT SEAL MAKES SPIRAKORE* TRANSFORMERS LAST LONGER

Breathing is stopped in General Electric Spirakore transformers. A Nitrile rubber gasket—resistant to oil, age, sunlight, or operating temperatures—seals every opening in Spirakore transformers. Sealing is so complete that hottest summers and coldest winters won't draw moisture or dust into the tank. Transformer life is prolonged.

With this sealing *accessibility is actually improved.* Unclamp the tank cover and it lifts right off. No adhesives to break—no surfaces to clean before resealing. You even re-use the gasket.

This better sealing is only one of the reasons why Spirakore is the finest transformer you can buy. The full story is told in our new bulletin GEA-5400. If you haven't received your copy ask your G-E representative, or write *Section D 402-103, Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

* Registered trademark of the General Electric Co.

On large tanks, Nitrile rubber gasket of circular cross-section is compressed as shown. A ring welded to the tank keeps the gasket in place and prevents too much compression.

On small tanks, a Nitrile rubber gasket of square cross-section is compressed between rim of cover and deep-rolled flange on tank. Shown uncompressed.

402-103

GENERAL ELECTRIC

The Electrical Week

Bulletin—New Defense Organization

INDUSTRIAL CONTROLS, including allocation of materials vital to electric power production, still will be coming from the Interior Department. But the decisions on who gets what and when will be dictated by the new Defense Production Administration.

That's the most important news for the utility industry in the reshuffling of Washington mobilization agencies.

Charles E. Wilson is still the "big boss" as chairman of the Office of Defense Mobilization, but the "little czar" will be William H. Harrison, who will head the new Defense Production Administration.

DPA will exercise most of the powers that Truman gave Wilson except that the economic stabilization administration will run prices and wages. Harrison's big job will be to do the key jobs that no one yet has undertaken:

1. Establish overall production priorities; 2. Set production goals and see that they are carried out; 3. Determine industrial expansion, how much and where; 4. Estimate labor requirements for defense production.

Interior Secretary Chapman as head of his department's mobilization agencies will be subject to Harrison's orders. The Defense Power Administration will remain in Interior under Administrator C. B. McManus.

Chapman will also be a member of the Defense Mobilization Board which will serve as an advisory body to Wilson.

Defense Power expects to pass on all electric utility construction involving aluminum and copper beginning with the second quarter of 1951. Two forms have been sent to utilities. One is a statement of current or proposed construction projects, the other is for listing proposed use of aluminum, copper, or copper-base alloy.

Only exemption from the new forms is for maintenance, repair, operating supplies or for new line designed to operate at 15 kv or less and with a net material cost of less than $50,000. If use or receipt of aluminum in the second quarter is involved, both forms must be returned by Jan. 15; if use or receipt of copper or copper-base alloy in the second quarter is involved, the forms should be submitted by Jan. 30.

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December 1 marked one year that the Department of Interior has been without an undersecretary. Perhaps the Hoover Commission missed a good thing in not recommending that the post be abolished.

Federal budget for the next fiscal year, containing federal power fund requests among other things, won't be trotted out until mid-month. Usually it's sent to Congress during the first few days of January, but determining military requirements has taken more time than usual this year.

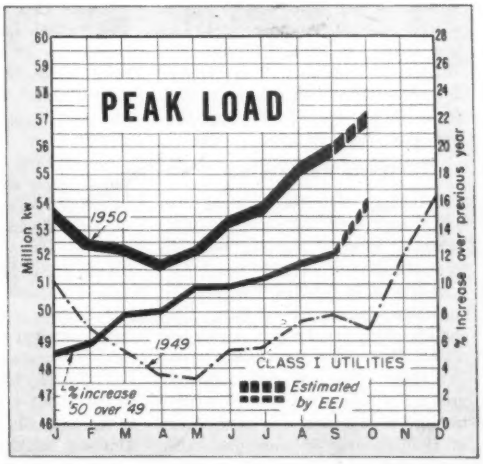
W. F. Wyman, president of Central Maine Power Co. told stockholders that if their company had received from the federal government tax treatment similar to that granted the Tennessee Valley Authority, it could have lowered rates almost 19% without reducing net earnings.

During the past holiday season there was little mention by municipals of "free electricity" for December, for many years an annual custom of many municipal systems.

Mild weather in northern California the week before Christmas kept the winter peak of Pacific Gas & Electric Co down to 2,436,000 kw on Dec. 21. This was 83,000 kw below August's 2,519,000 kw maximum for the year. Had a cold snap preceded instead of followed the holiday, the August mark would have been exceeded on a system which has had a summer maximum for many years.

Stocks of coal on hand at electric utility power plants on Nov. 1 totaled 31,375,766 tons, the highest level on record. Based on the October rate of consumption, this was a 114-day supply.

With but one week of 1950 remaining soft coal production was running 15.3% ahead of the same period of 1949.



7-Billion-Kwhr Week Big News of 1950

Industry Increases Output by Billion Kwhr in 49 Weeks; Korean Struggle Boosts Demand for Energy; Industrial Sales Jump 15%

The industry completed its biggest story of 1950 at midnight Dec. 23. It can easily be summarized in one paragraph:

Energy production of central stations for the week ended Dec. 23, 1950, was 7,032,740,000 kwhr. This was the first week that production topped the 7-billion mark. The record was set just 49 weeks after the week ended Jan. 14 when the 6-billion mark was reached with a total of 6,028,589,000 kwhr.

This paragraph tells the story without the color and the background and the significance that it really deserves. All are worth telling.

Increase 'Snuck' Up

The phenomenal increase, which was the greatest in history and is likely to stand as a record for decades, practically "snuck" up on the industry. Capacity has been ample; so only a few statistically minded persons were aware of what was taking place.

After hitting the 6-billion-kwhr mark in January and topping it the following week and topping that mark in the first week of February, output fell off but slightly until June (See chart p 19). Then the Korean invasion started, and output started sharply upward. Another record high was reached in June, 3 in July, 3 in August, 2 September, 2 in October, 2 in November, and 3 in December. In all there were 19 weekly production records set in 1950.

Growth Was Consistent

Percentage-wise the increase over 1949 each week followed a similar pattern. After a decrease of 0.8% in the first week of 1950 because of a movement in the New Year holiday, increases were the regular thing. During the spring months they ran around 10%. Then when the trouble started in Korea the increases became greater. In October and November because of the steel and coal strikes in 1949 growths of more than 20% were common. The week that the 7-billion-kwhr record was set the increase was 17.3% over the corresponding week of 1949.

There were a number of factors which contributed to the demand for energy in 1950. First, there were more customers. Second, everybody wanted more power. Third, business was good throughout the entire year of 1950.

As of Nov. 1, the latest date for which figures are available, there were 44,685,000 customers of all classifications. This was 2,123,211 or 5% more than the 42,561,789 on the line a year previously.

And because business was good and money plentiful, all these customers wanted more electricity. The industrial customers wanted most of all. Edison Electric Institute estimates that they purchased 139 billion of the 280 billion kwhr sold in 1950. This was 18 billion kwhr more than industry took in 1949 or an increase of 15%. Total sales were only 12.6% higher than in '49.

Commercial customers bought 51 billion kwhr, 10% more than in 1949.

Residential sales of 67 billion kwhr were up 15%. Average annual usage by residential customers reached 1,825 kwhr. This was an increase of 145 kwhr or 8.6% and was the highest yearly gain on record.

What makes the increase in weekly output from 6 billion to 7 billion kwhr significant is the speed and ease with which it was accomplished. Few persons in the industry expected any such gain. In its Forecast Issue (May 22, p 104) EW predicted 1950 output would be 312.7 billion kwhr. After the Korean fighting began, EW took another look. In the issue of Sept. 11 (p 107) EW stepped up its estimate to 13% above 1949. This meant a total output of about 329 billion kwhr. Preliminary reports indicate that this figure will be

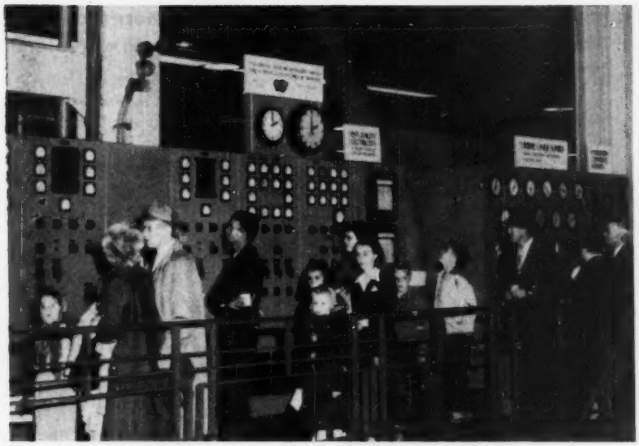
Bennion Comments on Industry Milestone

H. S. BENNION

"In producing for the first time for public supply 7 billion kwhr of electric energy in a single week, the nation's electric industry has reached another significant milestone. This has been done at a time when the productive might of all United States industry is being prepared for the nation's defense. To indicate the magnitude of the growth in our basic industrial strength, this total of 7 billion kwhr is more than double 1941's highest generation of power, occurring shortly after Pearl Harbor, and is over 50% greater than the highest weekly output of World War II.

"To emphasize further the great magnitude of this amount of power 7 billion kwhr, produced in one week, is more electric energy than was produced by the industry in the United States during the entire year of 1908 and is about equal to the total weekly power production rate of the entire world in 1935.

"The production of such a great amount of electricity in a single week is a convincing demonstration that this industry is doing its job, and it is a promise for the industry of continuing growth and progress."
—H. S. Bennion, vice president and managing director, Edison Electric Institute.



VISITORS stream past the generator switchboard during open house at Wisconsin Power & Light Co's recently completed 50,000-kw Blackhawk Plant at Beloit

correct within a few hundred million kwhr or a small fraction of 1%.

Never before in its history has the industry increased output so quickly. Though early records are inadequate and somewhat confused, it appears that it took the industry from 1882 to the early '20's to reach its first billion-kwhr week. The 2-billion-kwhr week made its appearance in 1936.

Changes in record keeping were made by EEI during this period; so later records are more accurate. The first 3-billion-kwhr week was that ended Jan. 11, 1941. Production reached 4 billion kwhr in the week ended June 12, 1943. Industrial demand because of the war was responsible for this rapid rise.

To increase production another billion kwhr took over four years. The 5-billion-kwhr mark was first topped in the week ended Sept. 13, 1947. Two years and four months later in the week ended Jan 14, 1950, the industry passed 6 billion kwhr.

It seems certain that the 7-billion-kwhr record will be topped frequently in 1951. But it is not likely that the 8 billion mark will be reached until 1952.

Ohio Edison Co Buys Lake Erie Plant Site

Ohio Edison Co has acquired approximately 200 acres of land along Lake Erie near Vermilion for possible future development as a power plant site. The site lies adjacent to and just west of Vermilion-on-the-Lake, and runs south from Lake Erie about 4,200 feet. Test borings have proved that the site will support a plant of large size.

In February 1949 the company purchased 100 acres of land at Stratton, Ohio, on the Ohio River, but as yet plans have not been drawn for a development there. The company's largest plant is located at Toronto, 4 miles below Stratton.

About 18 months ago the company also procured a site at Niles, Ohio, on the Mahoning River in Trumbull County. Subsequent studies of anticipated power needs by engineers indicated that the next power development in the Edison system should be made at the Niles site. Ground will soon be broken there for a 106,000-kw unit. Installation is scheduled for completion in 1953.

Sepa Is Granted Funds for Transmission Line

Congress has approved funds for the Southeastern Power Administration to begin construction of its first transmission line—a $6,870,000 link between Buggs Island project under construction by the Corps of Engineers on the Roanoke River and Langley Field, Va., site of aeronautical laboratories of the National Advisory Committee for Aeronautics.

Approval for the appropriation of $1,850,000 came Jan. 2 in the waning hours of the 81st Congress. The appropriation was approved by the House and deleted in the Senate where the Appropriations Committee urged Sepa and NACA to do business with Virginia Electric & Power Co. A House-Senate conference committee failed to reach agreement, and the controversial power issue was finally decided in favor of Sepa as the Senate receded from its action.

The Senate action appropriating the funds for Sepa came on a vote of 43-41 on a motion by Sen Carl Hayden, Arizona Democrat. Sen A. Willis Robertson, Virginia Democrat, and Sen Guy Cordon, Oregon Republican, attacked the Sepa plan on the Senate floor. Robertson charged that the new lines would parallel Vepco's, while Cordon said Interior should use the funds only if it is unable to negotiate a contract with the private utility.

The supplemental appropriation will permit Sepa to begin work on the line during the current fiscal year. Meanwhile, Sepa is expected to seek more extensive transmission line construction funds in the budget requests for fiscal 1952 which President Truman will send to Congress next week.

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Utility Will Build Plant

South Carolina Electric & Gas Co will build a 300,000-kw steam plant at a point somewhere between Columbia and Aiken. It is scheduled to go into operation in the fall of 1952.

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CONSTRUCTION WORK is being rushed on a series of dams and powerhouses along the Skagit River in Washington to supply Seattle City Light's growing need for power. Ross Dam, recently completed, can be seen in background as tunnels are being blasted through granite to carry water into turbines of the dam's powerhouse. The project will boost Seattle City Light's capacity to 508,000 kw

First Power Generated at Davis Dam Project

First power from Davis Dam on the Colorado River between Arizona and Nevada went on the line Jan. 5.

Davis Dam, downstream from Hoover Dam, will have five 45,000-kw units with a total installed capacity of 225,000 kw by next July. It will be the fourth largest Bureau of Reclamation power project, surpassed only by Grand Coulee, Hoover, and Shasta Dams.

The multi-purpose project is expected to cost a total of $114 million and will be completed in 1952. Originally known as Bullshead, the project was formally renamed in 1941 in honor of Arthur Powell Davis, director of reclamation from 1914 to 1923. Construction was delayed by World War II and resumed in 1946. The dam's reservoir was officially named Lake Mohave by an act of Congress last summer.

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TVA Plant Operating

The Tennessee Valley Authority has placed in operation on a temporary basis its 60,000-kw steam plant at Wilson Dam to meet increased power requirements. Operation will be chiefly in daytime and a force of about 200 men has been assembled, including about 40 key men shifted from other TVA divisions.

Federal Power Agencies Are Stressing Security

Visitors, if not absolutely barred, are now having a more difficult time touring federal power installations. Federal power agencies are moving toward wartime security restrictions, an Electrical World survey has disclosed.

Tennessee Valley Authority has clamped down near-wartime restrictions. All steam and hydro plants will be closed to tourists, and guards are stationed on all highways over dams. The new order, issued Dec. 16, was not due entirely to the national emergency. A spokesman said that increased work load has reduced the number of personnel available for tours. Visitors with technical interests, including persons from abroad, will be permitted to make special tours, escorted by TVA officials.

A security directive issued Dec. 21 by Interior Secretary Oscar L. Chapman ordered access to defense installations limited to "authorized persons." Specifically restricted were "those parts of the interiors of dams and power plants that are vulnerable to sabotage . . ."

Dams and power plants operated by the Corps of Engineers have been alterted to tighten security where necessary; however, the Corps has no new regulations covering visitors to power projects. Security measures at each site are determined by the district engineer, upon the advice of the commanding officer in the region.

Many private companies have also closed their plants to visitors.

SILVER PLAQUE safety award is presented to R. I. Brown, president of Mississippi Power & Light Co, by T. C. Westcott, president of Ebasco Services, Inc, during recent Ebasco Presidents Conference in New York City. These awards are presented annually to utility company clients achieving best safety records for the year

When it blows, the door drops

If the door is iced shut, the bright yellow tube still shows

You get *Dual Indication*

with L-M'S PVD® 561 the all-weather cutout

In summer or winter, sunshine or sleet, you can count on the DUAL INDICATION of the PVD 561. When the fuse blows, the flip-out device rapidly withdraws and ejects the blown link. Upper contact spring pushes the tube down, releasing the door, which is then forced out by pressure of the lower contact spring. Works like a charm!

If the door should be iced shut, the tube still drops. Its bright yellow plastic is a vivid indication to the lineman that he'd better do something about it.

Operation assures positive disconnect—there are no live parts on the door, which is easily unhooked for re-fusing. High-grade wet-process porcelain housing. Heavy copper contacts with silver-plated surfaces. Positive contacts and substantial current-carrying parts assure low operating temperatures. Non-ferrous parts eliminate danger of corrosion. Instant, smooth operation.

Two ratings: PVD-561, 5000 V, 50 amps; PVD-761, 7500 V, 50 amps. Both have rated interrupting capacities of 1200 amps. Door and cartridge assemblies interchangeable with the PVD-56 and 76. By carrying a spare fused door the lineman can re-fuse either type in 60 seconds or less.

Easy Way to Get Details

Ask the L-M Field Engineer for Bulletin FC2 or write Line Material Company, Milwaukee 1, Wisconsin (a McGraw Electric Company Division).

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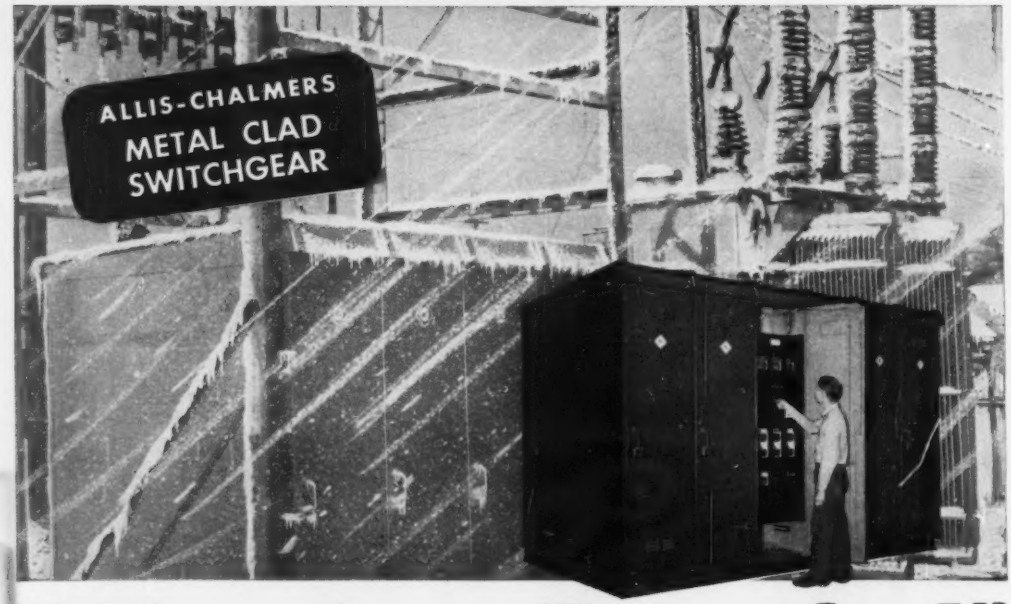
Complete Coordinated Equipment for Distribution Today



"Weather-Proofed"

AGAINST RAIN, SLEET, SUB-ZERO TEMPERATURES AND HIGH WINDS!

WEATHER-PROOFED Allis-Chalmers switchgear performs dependably in rain, sleet, sub-zero temperatures and high winds. Weather-proof construction provides protection in any weather... any atmosphere.

Here's why: (1) welded-in floor plates form tight bottom seal; (2) overhanging eaves keep out driving rain and sleet and protect vital switching equipment; (3) front and rear weather-proof door are held closed at three points; (4) rust resistant phosphate treated steel panels, multi-coated with weather tested paint, complete the top-to-bottom weather barrier; (5) ice and sleet shields protect locks.

Contact your local A-C sales representative for further information or write direct.

A 2916

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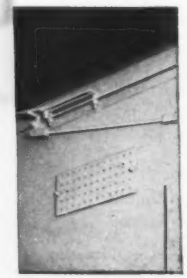
. . . PLUS OTHER ADVANTAGES



Protected Ventilation

Copper mesh filters behind louvre openings bar the entry of dust, dirt, insects, etc. They allow air to circulate and cool the switchgear interior. Space heaters prohibit moisture condensation, a frequent cause of insulation failure.

Full Length Instrument Panel

Provides more space for meters, relays, instruments. Panel swings out so you can readily reach secondary wiring. Provides protection, too. This design is adaptable to a variety of circuit arrangements.

Safer Than Ever Before

Bolted-on steel barriers completely isolate circuit breaker, current transformer, disconnect switch, lightning arresters, drawout potential and control transformer, and other equipment compartment.

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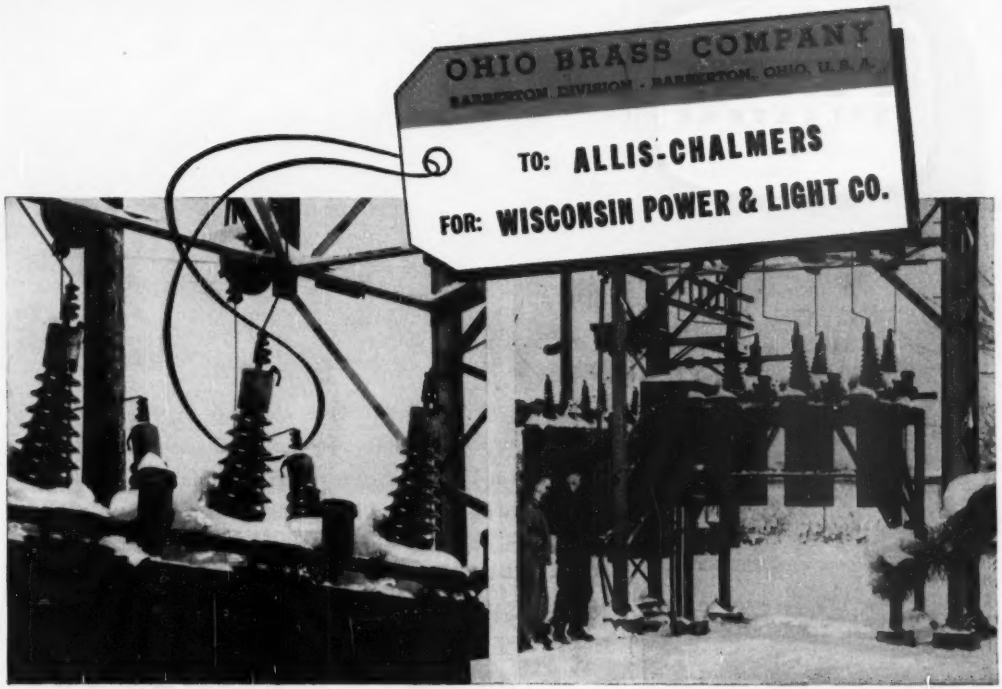

UPHOLDING A TROUBLE-FREE RECORD . . .

After 10 Years of Heavy-Duty Breaker Operation

In the Stoughton substation of the Wisconsin Power and Light Company, these Allis-Chalmers Power Oil Circuit Breakers are still completely free from trouble after ten years of heavy duty service. As stated by A-C, "--they hold an unbroken record of 100% dependability in meeting the severe operating requirements imposed upon them from the time of their installation, June, 1940. Designed and built to supply vital electrical protection on power systems, oil circuit breakers like these will interrupt short circuits or normal load currents. With this kind of double-duty, the extra large design factor of safety built into every A-C circuit breaker pays dividends."

Both insulation and mechanical support of contacts depends upon the O-B bushings which were furnished by Allis-Chalmers as original equipment and, for over 10 years, both the breakers and O-B bushings have been free from all trouble. To insure the basic goodness of good apparatus, be guided by this performance and specify---

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AN ESSENTIAL PART OF ANY OIL CIRCUIT BREAKER

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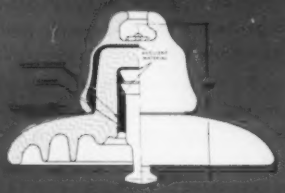
9 REASONS WHY PINCO SUSPENSION UNITS are RIGHT on the Job!

1. Pinco Porcelain . . . wet plastic process, non-porous, homogeneous, outstanding in dielectric qualities.
2. Electrical Characteristics . . . industry standards more than met.
3. High Mechanical Strength . . . assured by Pinco design refinements, quality standards, assembly techniques.
4. Beaded Edges . . . extra protection against gun shots, stones and other impacts.
5. Corset Caps . . . a Pinco innovation—minimizing possibility of corona discharge, providing most desirable loading on porcelain and giving maximum strength for weight.
6. Stepped Forged Eyebolts . . . preventing back thrust on porcelain in case of mechanical failure of pin.
7. Socket Design . . . extra strength, easier installation in strings.
8. Thermal Protection . . . provided by Pinco Resilient Compound where metal joins porcelain.
9. One Design . . . on 6", 7½" and 10" diameter units, assuring typical Pinco service from all sizes.

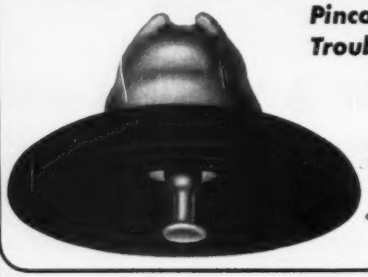


PINCO L1060 SPECIFICATIONS

Dry Flashover	80,000 volts
Wet Flashover	50,000 volts
Leakage Distance	11½"
M & E Strength	15,000 lbs. min.

Actually, we don't *yet* know the "life expectancy" of Pinco Suspension Units—for on installations dating as far back as 1921, they have rolled up an impressive service record of *more* than 30,000,000 service years without replacement because of electric or mechanical failure!

RUGGED CONSTRUCTION



Pinco's Answer to Trouble-Free Performance

1. Every design incorporates rugged sections, beaded edges to withstand impact blows encountered in installation and service.
2. Proper thickness of porcelain in the critical sections to give desired dielectric strength.
3. Proper contour design to give self-cleaning ability to entire shell thereby minimizing current leakage.

Thirty successful years in designing and manufacturing insulators back up the Pinco slogan—"RIGHT *for* the Job . . . RIGHT *on* the Job." Remember this whenever you specify and buy insulators.

See *Page 65 of the Pinco Catalog No. 49 for complete electrical and mechanical characteristics*

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Suspension Insulators . . . Switch and Bus Insulators . . . Distribution Clamps . . . Distribution Pin Types and Guy Strains . . . Transmission Line Fittings . . . Tree Insulators . . . Transformer and Circuit Breaker Bushings . . . One Piece and Multi-part High Voltage Pin Types . . . Suspension and Strain Clamps . . . Indoor Bus Support Porcelain Lightning Arrester Porcelain

BOB SEARIGHT, Long Beach, Calif., who assembles miniature carvings depicting various scenes of Americana inside discarded electric light globes, is shown with Mrs Searight and some of his creations. Searight saws off the metal base of a light globe and uses a piece of wire to place his carved pieces up through the neck of the globe. In larger globes more than 1500 pieces are required

Idaho Power, 4 Federal Projects Integrated; Chapman OK's Contract

A comprehensive agreement integrating operations of four federal power projects in southern Idaho with the Idaho Power Co system has been approved by the company and Secretary of Interior Oscar L. Chapman.

The new private-federal power contract provides that the company may purchase primary peaking, secondary, and dump power and utilize unused storage capacity at Bureau of Reclamation reservoirs. Idaho Power will serve over its system federal customers which are designated by the government.

Bureau of Reclamation dams covered in the new contract are Black Canyon, Boise River Diversion, Minidoka, and Anderson Ranch. They now have a totalled installed capacity of 36,400 kw; but when two more 13,500-kw units are installed at Anderson Ranch, the total capacity will be 63,400 kw.

Idaho Power will be paid for deliveries to federal customers on the basis of a three-part fee schedule: (1) 1 mill per kwhr for supplying loads west of Glenns Ferry, Idaho; (2) 1.5 mills per kwhr for loads east of Glenns Ferry; and (3) an additional 2 to 2.3 mills per kwhr for service on less than 44-kv facilities of the company.

The company will pay the government approximately $129,000 per year, subject to adjustments for actual power delivered by the government.

Under terms of the contract, Idaho Power will purchase: (1) 3,500 kw (roughly 6.25 million kwhr per year) of primary peaking power, with 1,500 withdrawable, at a rate of 6 mills per kwhr; (2) secondary power, estimated at about 28 million kwhr per annum, at 1.75 mills; and (3) dump energy as available at 1 mill per kwhr.

Using the extra capacity of federal dam reservoirs for water storage will give the company greater flexibility in its water power operations.

Olds Named to Truman's Northeast Study Group

Leland Olds, formerly a member and chairman of the Federal Power Commission, has been named the Department of Interior's representative on President Truman's New York-New England Interagency Resources Study Committee.

Olds will assume his new duties when the work of the President's Water Resources Policy Commission is terminated, probably this month. As WRPC commissioner in charge of studies, Olds directed preparation of what is described as "a preliminary reconnaissance study of the possibilities of combining the St. Lawrence with New England power." This study has not yet been made public.

As a member of the Federal Power Commission from 1939 to 1949, Olds found himself in frequent opposition to the views of much of the privately owned electric utility industry. He was FPC chairman from 1940 to 1946 with a short interruption in 1944-45. In June 1949, President Truman reappointed Olds to FPC, but bitter opposition, led by natural gas interests, arose. The Senate refused to confirm him.

In his new position Olds will represent Interior on the interagency committee which is due to file a report to the President by July 1952. He will coordinate and direct Interior's activities in connection with the New York-New England study.

The interagency committee is composed of representatives of the Corps of Engineers, Departments of Agriculture and Commerce, the Federal Power Commission, and Federal Security Agency. Col. Frederick F. Frech of the Corps has been designated chairman of the committee. The first meeting is expected to be held in Boston this month.

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Vepco Raises Wages 6%

Virginia Electric & Power Co has announced a 6% wage increase for "practically all" its employees, effective the last payroll of this year. The increase affects approximately 4,500 employees, both union and non-union, throughout the system, and will add about $500,000 to the company's annual payroll.

CAPTAIN J. N. PARROTT, right, executive manager of the Inter-American Safety Council, presents a plaque to W. F. Routh of Rio De Janeiro as representative of employees of six American & Foreign Power Co public service subsidiaries in Brazil. The subsidiaries won top award in the council's 1949 Latin-American safety contest. The award was presented in New York City

Commonwealth Edison Co Is Adding 210,000 Kw

Commonwealth Edison Co has ordered a 150,000-kw unit and a 60,000-kw unit to be installed in the company's Ridgeland Station and Public Service Co of Northern Illinois station at Dixon respectively. Installation of this additional capacity is scheduled for completion in 1953.

The Ridgeland addition will complete the capacity for which that station was designed, making it the largest in the Edison system. Ridgeland will then have four 150,000-kw units or a total of 600,000 kw.

The Commonwealth Edison system has a total capacity of 2,802,000 kw at present. Additional facilities now under construction and on order will boost the present capacity to in excess of 3,400,000 kw. This will be about double the capacity of 20 years ago, and will bring to more than 1,100,000 kw the generating facilities for the system since World War II.

•

Fiscal '50 Saw TVA Hit Over 17 Million Kwhr

Tennessee Valley Authority's power system generated 17,541 million kwhr, "considerably more than any other integrated power system in the country," during federal fiscal 1950 ended last June 30.

TVA's seventeenth annual report disclosed that excellent water conditions dropped power production expenses to only $9.7 million, compared with $17.4 million in the previous year. Some 94% of TVA's total generation in fiscal '50 was from hydro plants.

Power revenues were $57.8 million, against total operating expenses of $30.8 million, with net operating revenues estimated at $27 million. Return on $465 million of average depreciated investment was expected to be 5.75%, highest return in TVA's history.

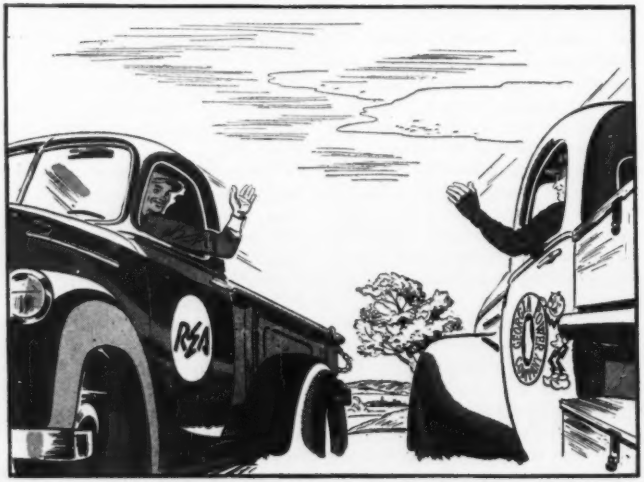
Net power income, after payment of interest of $938,000, was more than $26 million.

Declaring that "TVA power is distributed by the people," the report said that 95 municipal systems and 50 cooperative systems distributed over 6.5 billion kwhr of TVA power to 1.1 million ultimate customers during fiscal '50. Combined revenues of these distribution systems was $81.6 million, with net earnings after all expenses of $14.4 million.

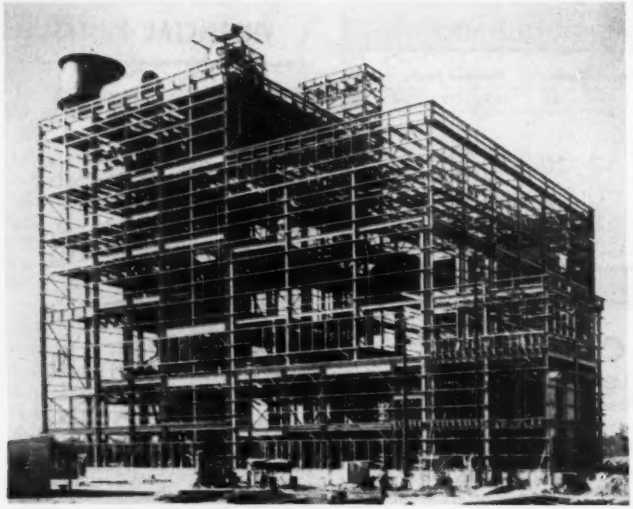
Average domestic consumer in the fiscal year used 3,079 kwhr, with a total average bill of $46.

Wage Increase Granted

Central Arizona Light & Power Co recently gave its employees, members of IBEW, an across the board wage increase of 16¢ an hour. The action was taken voluntarily.



TWO TRUCKS—ONE ERRAND! is the idea this picture is trying to convey. This picture is part of an advertisement being run by Georgia Power Co in weeklies and small dailies in rural areas to emphasize that both the company and the REA-financed co-ops are doing the same job—bringing electricity to the farmers



STEEL FRAMEWORK is completed at Mississippi Power Co's Plant Sweatt, near Meridian, Mississippi. It will have a 43,500-kw generator, largest unit on the company's system. Initial operation of the plant is scheduled for February 1951

Big Increase Expected in Power Demands of Colorado Basin

Power requirements of the Lower Colorado River basin—Arizona, southern California, and southern Nevada—will be two and a half times as great in 1970 as they were in 1948. This is the finding of a new Federal Power Commission power market survey just issued for the region.

Loads of electric utilities in the area will be 38-39 billion kwhr in 1970, compared with 15 billion kwhr in 1948. The report concludes that this will mean more fuel-electric capacity as well as water power in the region which now has more than half of its capacity in hydroelectric installations.

Peak demand in 1948 was more than 2.8 million kw, compared with an expected demand in 1970 of 7.5 million kw. Installed generating capacity in 1948 was 3.25 million kw, of which 1.87 million kw, or 58%, was in hydro. In addition to presently planned capacity expansion, another 5 million kw will be needed by 1970, it is estimated.

With perhaps three million more kw which can be developed on the Colorado River in the region, the report notes that fuel-electric capacity will "have to supply a large amount of the new generating capacity which must be installed."

Biggest jump in energy requirements is forecast for residential use. Because of population growth and increasing average power use, residential demand is expected to soar from 2,368 million kwhr in 1948 to 10,416 million kwhr in 1970, a 340% gain. Average annual use per customer will rise from 1,486 to 3,850 kwhr during this period.

Other major energy requirement estimates for the region in 1970 compared with 1948; industrial, 5,140 million kwhr (1948) to 11,141 million kwhr (1970); commercial, 2,039 million kwhr to 5,284 million kwhr; and rural, 191 million kwhr to 453 million kwhr. Pumping for irrigation which required 1,592 million kwhr in 1948 is expected to have declined 7% to 1,485 million kwhr in 1970.

The Colorado study is one of a series of such surveys being made by the FPC to guide it in planning future developments.

Power District Accused of Union Busting by IBEW

Arizona's Salt River Project Power District has been accused by the International Brotherhood of Electrical Workers of "using public ownership in an old-fashioned campaign of union busting."

The charges were hurled by IBEW President D. W. Tracy after a strike called Dec. 19 by IBEW Local 266 of Phoenix against the district. Approximately 1,200 workers on the electric light and power system and irrigation properties of the district are members of the local. Superior Court of Maricopa County, Ariz., granted a temporary restraining order against the union and its officers on Dec. 22, and the public power district is asking a permanent order.

Tracy said issues in the dispute are the refusal of the district to continue a four-year-old collective bargaining agreement and refusal to "make adequate correction of the present substandard wage scales of its employees." IBEW held a collective bargaining agreement with the Salt River Project while it was operated by private ownership. Transfer to public operation was approved in October, 1949.

•

45,000-Kw Unit on Line

The first of three 45,000-kw generators went on the line Dec. 16 at Center Hill Dam on the Caney Fork River near Cookeville, Tenn. The dam was constructed by the Corps of Engineers and will have an initial installed capacity of 135,000 kw. Power from Center Hill is marketed by the Department of Interior's Southeastern Power Administration. Total output of the new project is being sold by Sepa to the Tennessee Valley Authority.

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Mexican Hydro Is Dry

Mexico may soon use its air force to help fight the country's power shortage. Because conditions affecting Mexico City's hydro generation are similar to those of the California Electric Company's Bishop Creek watershed, the Mexican Air Force has loaned Capt Julio Caly Mayor to the Commision Federal de Electricidad for study of Calelec dry ice seeding.

YIELDS (%) — Operating Electric Utility Securities

Quality	Bonds			Preferred Stocks			Common Stocks		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
DATE 1950									
Dec. 28	**2.65**	**2.67**	**2.78**	**3.86**	**4.14**	**4.51**	**5.80**	**6.54**	**7.44**
Dec. 21	2.65	2.68	2.79	3.85	4.17	4.52	5.94	6.67	7.55
END OF QTR.									
3rd 1950	2.66	2.67	2.76	3.81	4.08	4.46	5.70	6.54	7.25
2nd 1950	2.68	2.66	2.74	3.79	4.03	4.38	5.38	6.51	7.50
1st 1950	2.59	2.61	2.74	3.78	4.01	4.36	5.22	5.85	6.67
4th 1949	2.59	2.61	2.79	3.85	4.06	4.46	5.37	6.15	7.01

Data: Reis & Chandler, Inc.

Final EPT Bill Passes Congress; Terms Similar to Senate's Version

An excess profits tax bill containing special relief for the utility industry was passed by the House of Representatives last week. It was promptly signed into law by President Truman, who criticized it as "overly liberal."

In its utility provisions the bill, product of a House-Senate conference committee, was substantially the same as the Senate version (EW Dec 25 p 14). It gives regulated utilities a special credit they may use instead of the average earnings and invested capital credits in computing their tax liability. For electric companies this minimum credit consists of 6% of the sum of all equity capital, retained earnings, and borrowed capital plus regular corporate taxes.

The measure combines a two-point boost in the regular corporate surtax rate with an extra 30% levy on profits above the excess profits tax exemption. The surtax rate is raised to 22%, making a combined normal and surtax rate of 47%. Both the new corporate tax and the excess profits tax are retroactive to July 1, 1950. The bill stipulates that the government cannot take more than 62% of any firm's income in regular corporate, excess profits, and penalty taxes.

Taxpayers using the average earnings credit will get a basic credit of 85% of their average earnings for the best three years of the base period 1946 through 1949. Any deficit year can be raised to zero. The credit will take into account half of the net additions to capital in 1948 and all the 1949 net additions, including 100% of new equity or retained earnings and 75% of new borrowed capital. An amount equal to 12% of these additions will be added to the average earnings credit.

The invested capital base credit will be 12% of the first $5 million of invested capital, 10% of the next $5 million, and 8% of anything over $10 million. Invested capital will include 100% of equity and retained earnings and 75% of borrowed capital. If borrowed capital is included, only 25% of the interest payments on it can be deducted from income subject to tax. Equity capital and retained earnings can be figured either on the World War II historical approach—original paid-in capital and surplus plus any net accumulation of earnings over the entire period of the company's existence—or on the basis of a new "assets approach." Under the latter method the company will compute its assets, including retained earnings, subtract its liabilities, and add its net loss during the 1946-49 or 1940-49 period, whichever is greater.

Credit for net additions to capital will be allowed at a flat rate of 12% in the case of firms using the average earnings base or the invested capital-asset approach base. Firms using the historical invested capital approach will have an additional credit for capital additions of 12%, 10%, or 8%, depending on their rate brackets. Reductions in the credit will be made for reductions in capital.

Special provisions are made for abnormal conditions in the base years and various types of industry.

FINANCIAL BRIEFS

Nova Scotia Light & Power Co, Halifax, N. S., has been granted Public Utilities Board of Nova Scotia permission to increase rates by about 19%. Affected are residential, commercial, and power rates. Annual revenue is expected to be increased $575,000 for 1951.

Stockholders of Reliance Electric & Engineering Co will be asked to approve a two-for-one split of the company's common stock and an increase in the total number of authorized shares from the present 350,000 to 1 million at the regular stockholders' meeting Jan 18. Only stock sufficient to cover the split would be issued at the outset.

Los Angeles Board of Water & Power Commissioners has sold $10 million in electric plant revenue bonds at a net interest of 1.776%. Bonds will be paid out of earnings over a 40-year period. Proceeds will be applied to a $25-million construction program in 1950-51.

Manila Electric Co has now been put on a paying basis for the first time since 1941. The Central Bank of the Philippines has approved dollar payments representing current interest and dividends at the annual rate of $2,148,750. Such payments are subject to an 18% Philippines withholding tax which will be an offset to American income taxes. Only the company's debentures are in public hands; all other securities are held by Associated Electric Co, a wholly owned subsidiary of General Public Utilities Corp.

New England Electric System is selling its 99% stock interest in United Electric Railways Co, which operates trackless trolleys and busses in Providence, Pawtucket, Woonsocket, and surrounding Rhode Island communities.

The Virginia Corporation Commission has decided not to levy its special revenue tax on public utilities and motor carriers in 1951. The levy of 0.2% on gross receipts has been collected the past three years to pay expenses incidental to the task of regulation.

Now, with ORTO*

L-M ROUND-WOUND* TRANSFORMERS give you improved overload capacity

L-M ROUND-WOUND DESIGN has always been remarkable for its balanced performance, and its outstandingly high short-time overload capacity. These advantages have been achieved without any sacrifice of other performance characteristics, through the excellent cooling.

This cooling is due to the continuously *wound* core with its cruciform shape, which provides passages for ample circulation of cooling oil, and the long *round* coils, which expose large surfaces to the oil.

Now, with ORTO (oxidation resistant transformer oil), L-M distribution transformers have even higher resistance to heat deterioration; the inhibitor greatly extends the period preceding serious oil deterioration; and the user gets the proved L-M "new transformer" overload capacity for years and years of extra service.

L-M's ORTO oil keeps cooling passages clear of sludge; prevents the formation of acids that deteriorate the cellulose insulation; prevents corrosion and rust caused by acidified oil. ORTO brand oil, now supplied in L-M transformers, was the result of long and extensive research and development, and has been fully proved in rigorous accelerated service tests.

For complete information ask the L-M Field Engineer; or write Line Material Company, Transformer Division, Zanesville, Ohio (a McGraw Electric Company Division).

** Trademark*

32

Now available... ORTO concentrate

ORTO oil is now available in a *concentrate* for use in existing transformers of any make or rating. Ask for full information.

ORTO... another L-M "first"!

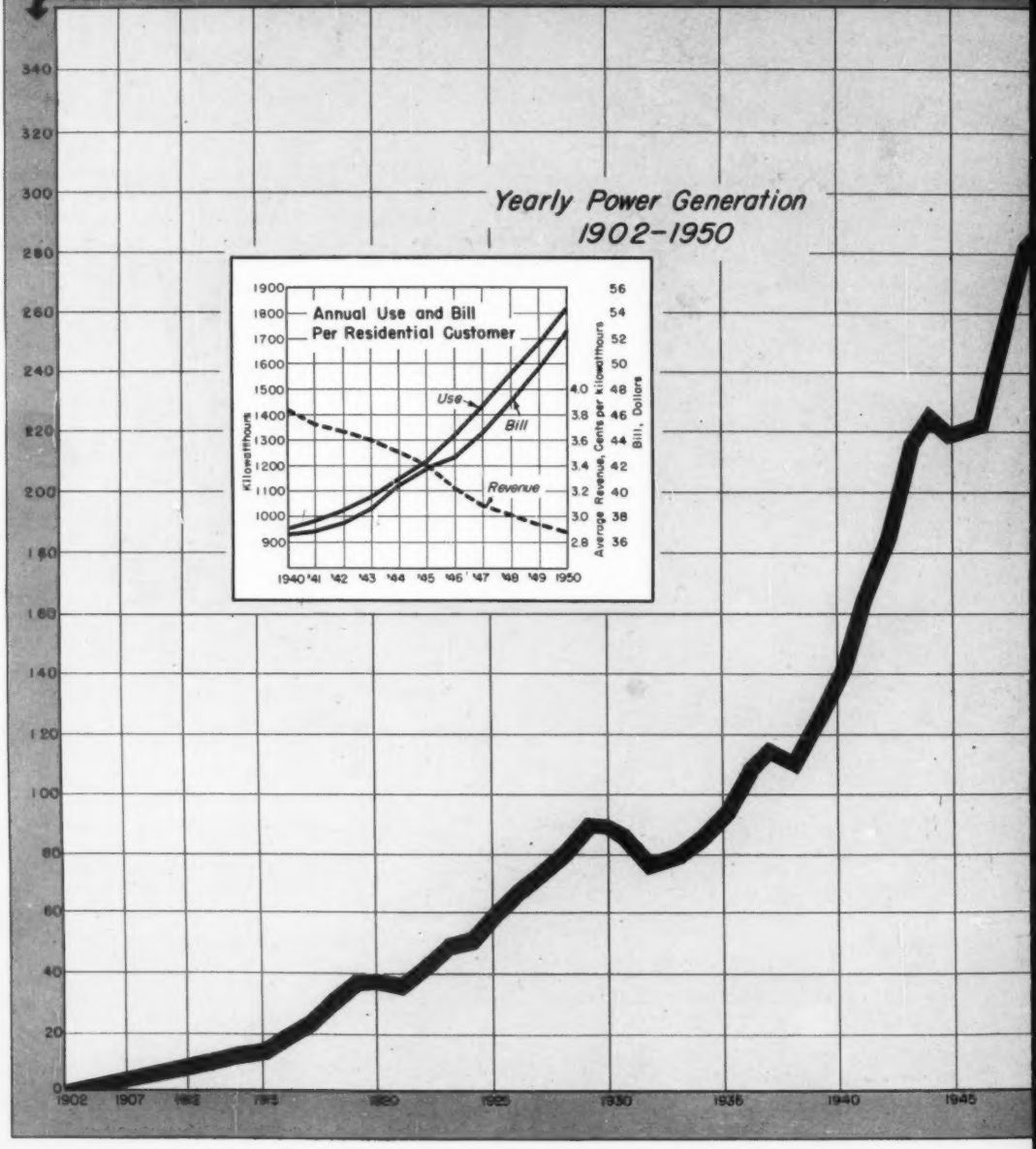
L-M was the first to announce the regular use of inhibited transformer oils—another example of L-M leadership in research and product improvement.

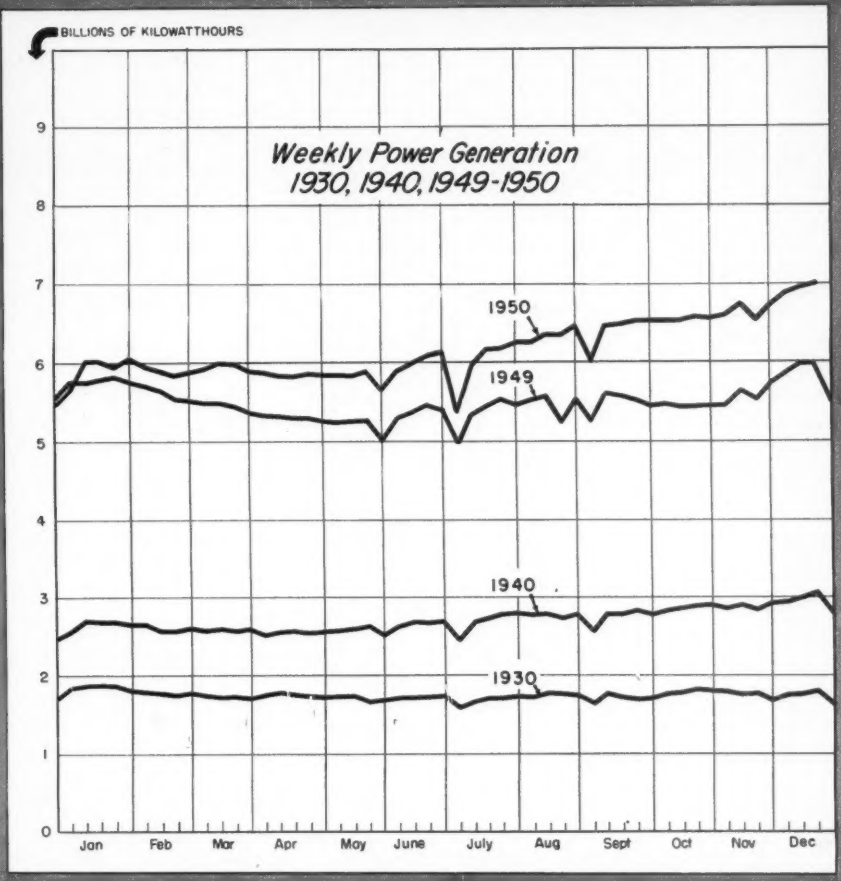
LM®

LINE MATERIAL... Transformers

Complete Coordinated Equipment for Distribution Today

PRODUCTION OF ELECTRICAL ENERGY IN THE UNITED STATES
1902 TO 1951




BILLIONS OF KILOWATTHOURS
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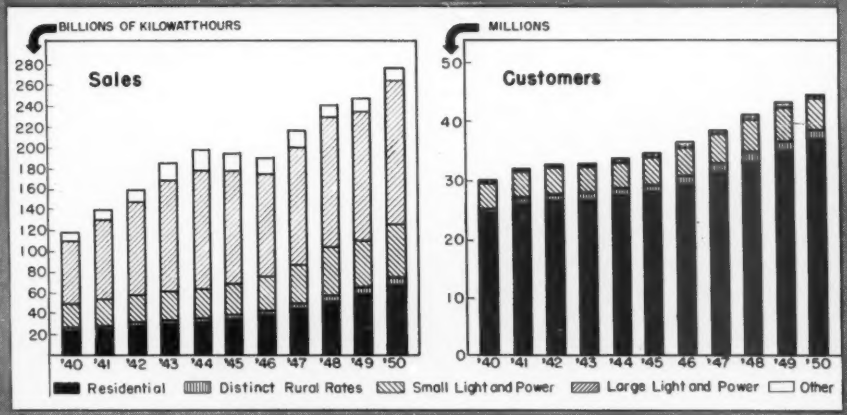
BILLIONS OF KILOWATTHOURS
Sales
MILLIONS
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'40
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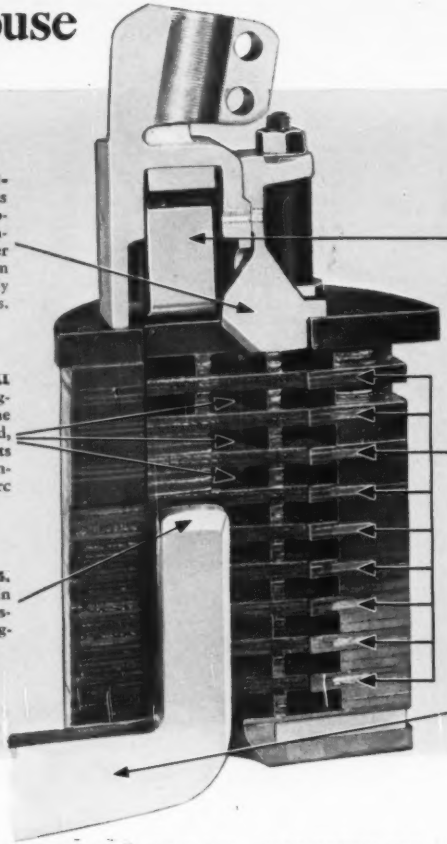
46
'47
'48
'49
'50
Residential
Distinct Rural Rates
Small Light and Power
Large Light and Power
Other

YOU CAN BE **SURE**.. IF IT'S

Westinghouse



ARC HORN PROTECTS CONTACTS. Arc horn supplements "De-ion" Grid action to protect contact faces from burning. As contacts open, upper arc terminal transfers from finger to arc horn. Easily removable to inspect contacts.

EFFICIENT INTERRUPTION AT ALL CURRENT VALUES. Arc is magnetically forced back into the closed section of the grid, where oil trapped in pockets provides fresh flow of unionized gas . . . prevents arc from restriking.

ARC-RESISTING CONTACT TIPS. Maximum life of contacts in high-capacity breakers is assured by arc-resisting, tungsten alloy contact tips.

POSITIVE, LOW-RESISTANCE CONTACT. Large contact fingers, backed by heavy compression springs, assure adequate contact and proper pressure over entire contact surface without sensitive adjustments. Contacts easily meet the momentary and four-second ratings.

ARC PATH LENGTHENED BY MAGNETIC CONTROL. Insulated iron plates pull the arc into contact with fresh oil.

LONG CONTACT LIFE CUTS MAINTENANCE. Contact areas are kept free from burning by "De-ion" Grid action. Grids provide rapid control of fault currents by quenching the arc. Arc is drawn into the pockets of grid, cooled and snuffed out.

EXCLUSIVE "DE-ION"® GRID CONTROL ASSURES

Greater Service Continuity

FOR 15 TO 69-KV LINES

DESIGN TESTED AND VERIFIED IN THE Westinghouse HIGH POWER LABORATORY

Only Westinghouse Outdoor Frame-mounted Oil Circuit Breakers give you "De-ion" Grid Arc Control, which sharply reduces contact burning and oil deterioration. The result . . . *substantially reduced maintenance costs!*

Get the facts about this and other *plus* features of Westinghouse Breakers. Call your nearby Westinghouse representative, or write for booklet B-3686-A. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Penna. J-60737

Westinghouse

POWER CIRCUIT BREAKERS

Canadian Output Soaring; Record Predicted for '50

With output for the first three quarters of 1950 at a record high of 37,301,459,000 kwhr, Canada's 50-billion-kwhr year seems assured. Consumption of primary power in the first nine months of 1950 also was at the record high of 33,534,620,000 kwhr.

A record for consumption of primary power in one month was set in September when the total was 3,843,-357,000 kwhr. This was the nineteenth consecutive month in which primary consumption exceeded that of the same month a year previous.

The following statistics from the Dominion Bureau of Statistics are in thousands of kilowatt hours:

Period	1950	1949
Nine Months' Output	37,301,459	34,743,784
Primary	34,679,305	32,167,090
Secondary	2,622,154	2,576,691
Primary Consumption	33,524,620	31,098,673
Net Exports to U. S.	1,463,708	1,411,593
September Output	4,113,216	3,753,055
Primary	3,975,163	3,609,125
Secondary	138,053	143,930
Primary Consumption	3,843,357	3,495,733
Net Exports to U. S.	142,839	119,614
August Output	4,190,983	3,798,459
Primary	3,974,731	3,664,551
Secondary	216,252	133,908
Primary Consumption	3,841,050	3,533 662
Net Exports to U. S.	149,546	140,791

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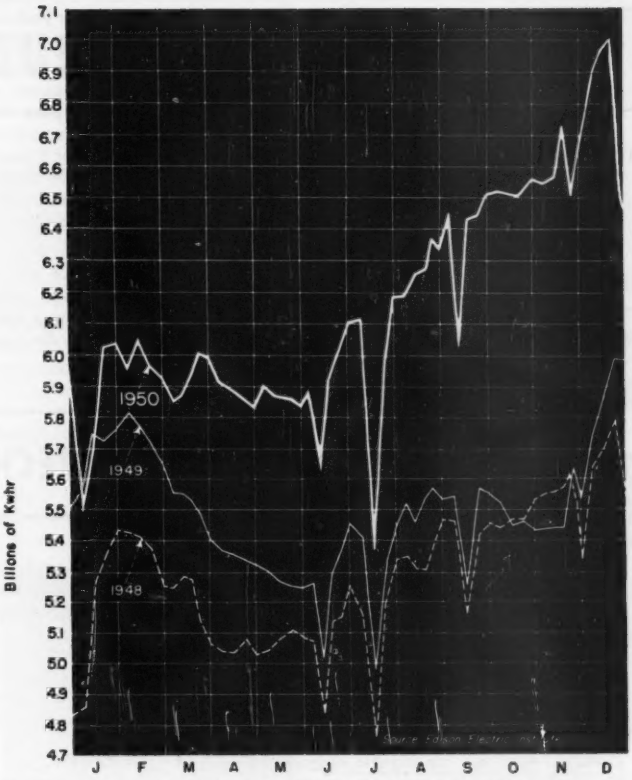
Co-op's Output Increases

Central Oregon has stepped up deliveries of electricity to its customers by 136% during the past three years. The co-op now has 505 miles of line in service and is serving 1,420 users. An additional 80 miles of line will be energized in the next few months.



Output Week Ended Dec. 30—6,479,302,000 Kwhr

Weekly Output, Millions Kwhr					
1950		1949		1949	
Dec 30	6,479	Dec 31	5,493	Jan 1	5,562
				1948	
Dec 23	7,033	Dec 24	5,994	Dec 25	5,508
Dec 16	6,985	Dec 17	5,997	Dec 18	5,790
Dec 9	6,909	Dec 10	5,881	Dec 11	5,705
Dec 2	6,716	Dec 3	5,743	Dec 4	5,646
Nov 25	6,508	Nov 26	5,537	Nov 27	5,349
Nov 18	6,728	Nov 19	5,644	Nov 20	5,627
Nov 11	6,574	Nov 12	5,435	Nov 13	5,571
Nov 4	6,551	Nov 5	5,435	Nov 6	5,564
Oct 28	6,563	Oct 29	5,433	Oct 30	5,555
Oct 21	6,503	Oct 22	5,430	Oct 23	5,539

Percent Change from Previous Year			
	Dec 30	Dec 23	Dec 16
New England	+17.9	+12.7	+10.5
Mid-Atlantic	+18.2	+16.7	+14.5
Central Industrial	+18.3	+18.0	+18.6
West Central	+12.9	+13.5	+12.2
Southeast	+23.0	+28.2	+27.1
South Central	+19.9	+20.9	+16.5
Rocky Mountain	+12.4	+10.5	+ 9.8
Pacific Coast	+13.6	+ 8.8	+ 9.5
Total United States	+18.0	+17.3	+16.5

MEETINGS

American Institute of Electrical Engineers
High Frequency Measurements Conference, sponsored with the Institute of Radio Engineers and the National Bureau of Standards, Hotel Statler, Washington, D.C., January 10-12; Winter General Meeting, Hotel Statler, New York, January 22-26; District No. 4 Meeting, McFadden-Deauville Hotel, Miami, Fla., April 11-13.

Public Information Program
Mid-Atlantic Regional Meeting, Hotel Hershey, Hershey, Pa., January 12.

Edison Electric Institute
Accident Prevention Committee, Lord Baltimore Hotel, Baltimore, Md., January 15-16; Commercial Cooking Committee, Conference Room, Potomac Electric Power Co., Washington, D. C., January 15-16; Electrical Equipment Committee, Hotel Cleveland, Cleveland, Ohio, February 12-13; Transmission and Distribution Committee, Atlanta Biltmore Hotel, Atlanta, Ga., February 15-16; Annual Sales Conference, Edgewater Beach Hotel, Chicago, Ill., April 2-5.

★National Rural Electric Cooperative Association
Annual Meeting, Cleveland Municipal Auditorium, Cleveland, Ohio, January 29-February 1.

Pennsylvania Electric Association
Winter Meeting, Transmission and Distribution Committee, William Penn Hotel, Pittsburgh, February 1-2; Hydraulic Power Committee, Benjamin Franklin Hotel, Philadelphia, February 8-9; Electrical Equipment Committee, Hotel Emerson, Baltimore, Md., March 1-2; Prime Movers Committee, Berkshire Hotel, Reading, Pa., March 8-9.

Missouri Valley Electric Association
Industrial and Commercial Sales Conference, President Hotel, Kansas City, Missouri, February 8-9; Engineering Conference, President Hotel, Kansas City, Mo., April 4-6.

Adequate Wiring Bureau
Annual Conference, Sheraton-Gibson Hotel, Cincinnati, Ohio, February 15-16.

North Central Electrical Association
Electrical Industries Convention, Nicollet Hotel, Minneapolis, February 25-28.

National Electrical Manufacturers Association
Annual Meeting, Edgewater Beach Hotel, Chicago, Ill., March 12-15.

National Association of Corrosion Engineers
Conference and Exhibition, Hotel Statler, New York, March 13-16.

Protective Relay Engineers
Annual Conference, Agricultural & Mechanical College of Texas, College Station, Texas, March 26-28.

Oklahoma Utilities Association
Annual Convention, Mayo Hotel, Tulsa, Oklahoma, March 29-30.

American Society of Mechanical Engineers
Spring Meeting, Atlanta Biltmore Hotel, Atlanta, Ga., April 2-5.

Electric Association of Chicago
Industrial Electrical Exposition, Sherman Hotel, Chicago, Ill., April 2-7.

★Midwest Power Conference
Sherman Hotel, Chicago, April 4-6.

Northwest Electric Light & Power Association
Engineering Section, Hotel Utah, Salt Lake City, Utah, April 25-27.

★Addition This Week.

IN THE INDUSTRY

FISCHER BLACK

To: Lewis W. Jones, president, University of Arkansas
Roland R. Renn, president, Montana State College
Gilbert F. White, president, Haverford College
Members of the President's Water Resources Policy Commission

Gentlemen:

By recent contacts among men of professional competence and highest integrity who are students of water conservation policy, I find that almost to a man, they are appalled at the recommendations of the Water Resources Policy Commission, of which you are members.

They cannot understand how the commission failed to reflect views which they and others expressed orally at meetings as well as in writing. The biased views of certain commission members were well known and discounted. But from you was expected an objective and impartial analysis of all the evidence.

All of those whom you heard verbally and by written expression were unanimous in approving the idea of water conservation. All were in agreement that the federal government should have a hand in this task. There was no disagreement on the need for flood control, irrigation, water conservation, and electric power.

All Should Be Treated Equally

However, there was considerable disagreement on how some of these desirable objectives should be provided. The major conflict lay in the degree to which the federal government invades the fields of interest of states, municipalities, and private enterprise. Other conflicts lay in the question of whether subsidized, non-taxpaying, federal power enterprises are to be preferred to those of private companies paying federal taxes; in whether there can be two kinds of citizens or electric customers, those who receive subsidized power through municipal and co-op systems and those who pay taxes as customers of power companies but are not allowed the use of subsidized power. We believe that all should receive equal treatment when the federal government builds power projects with tax dollars. A regulated utility must and does pass on resultant savings to the customer.

Since you were the representatives of the general public on the commission and since representatives of the electric companies were excluded from the commission, it was hoped that you would keep their interests in mind.

Was It Oversight Or By Design

We assume you were so concerned with the broad policies of water development that you did not have time to consider details. Otherwise, how could you permit those representing a governmental agency outwardly promoting federal power to write recommendations for the power policy of the nation. Certainly, that part of the report could have been written—may have been written—without any reference to the testimony presented to the commission.

Is it possible you might restudy the section of the report on hydroelectric power as well as others? If so, will you make it a point to talk to men of unquestionable integrity, who represent the engineering profession through the Engineers Joint Council? Since you are not expected to know the truth or falsity of claims made relating to the electric power industry, a logical procedure would be to consult with and accept the guidance of those who do.

I believe that I am expressing the sentiments of a large segment of the electrical industry and the engineering profession in asking why the recommendations of outside agencies were ignored. We shall be glad to publish your answer to this question.

(Signed) Fischer S. Black, Editor

TECHNICAL NOTES

ARCHER E. KNOWLTON

Airblast circuit breakers have proven more reliable than oil circuit breakers for the large number of daily switching operations of large electric furnaces.

Methane from coal workings may amount in calorific value to one percent of the coal mined. Why not explore the feasibility of advance tapping for fuel purposes rather than waste it by dilution? (World Power Conf Paper A-20)

Hardware is such a small fraction of pole-line cost that it should pay to get corrosion-resistance life equal to that of the full-length treated pole on which it is installed.

Plastic insulation can be applied to tools and climbers to give an initial breakdown protection up to 22 kv.

Motors on station auxiliary drives may be expendable, but the functions they perform have to be dependable. Fault protection for the circuit may be more profitable than overload protection for the motor.

Television sets have been demonstrated by means of an 80-ft telescoping antenna; in one area a single such antenna caused two power line outages in 24 hrs.

Remotely controlled disconnecting switches should be inspected after operation to insure proper functioning. Green light may mean only that the auxiliary switch functioned.

December peaks of one year are customarily passed in November of the succeeding year, but it was June of 1950 that surpassed December of 1949.

Arm contacts by linemen ran to 14 in 2 years even though the utility had provided rubber sleeves for their use. Since use was strictly required 7 years ago there has not been a single arm contact.

MANUFACTURERS and MARKETS

Harvey Will Turn Out 72,000 Tons of Aluminum

Harvey Machine Co's new aluminum and alumina plants will produce 72,000 tons of the metal annually for stockpiling and other defense needs under terms of an agreement reached recently with the General Services Administration. This brings to 471,000 tons a year the amount of increased aluminum output brought about so far by the government's program for expansion and reactivation of the industry, according to Jess Larson, GSA administrator.

Harvey expects its plants (EW, Dec 25, p 21) to be in operation by the middle of 1952. The program will be privately financed. Assistance will be given, if needed, under provisions of the Defense Production Act by GSA recommendation to the National Security Resources Board. This act provides for loan guarantees and accelerated plant amortization.

Since Harvey is a newcomer to the group of primary aluminum producers it will be required to sell only 25% of its production in the open market. Different figures were set for Aluminum Co of America, Kaiser Aluminum & Chemical Corp, and Reynolds Metals Co, with which GSA announced agreements earlier (EW, Dec 11, p 27). The larger companies must sell in the open market up to two thirds of the metal produced in their new plants for five years and 25% to users with no primary producing facilities of their own for 15 years thereafter.

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Investment Group Buys Stock of Revere Electric

All the capital stock of Revere Electric Manufacturing Co, Chicago, has been sold for investment purposes to a group headed by G. L. Ohrstrom & Co, New York. The stock was valued at about $1.5 million.

The transaction did not include sale of the manufacturing property. No change has been made in the management or conduct of the business. George L. Ohrstrom was elected a director and chairman of the board, and H. T. Cavanaugh, Merrill Stubbs, and Albert Boustead of Ohrstrom were added to the board. Revere makes and distributes outdoor lighting equipment used for service stations, airports, streets, and military installations.

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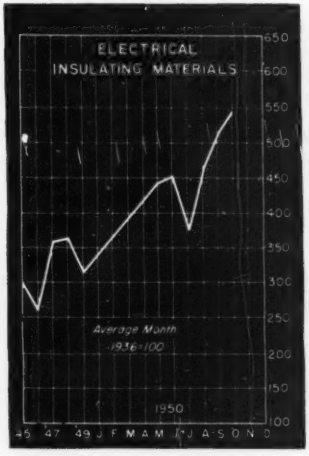
Insulating Materials Sales Hit High Point in October

Sales of electrical insulating materials zoomed to their highest point of the year in October.



The index of sales billed compiled by the National Electrical Manufacturers Association rose to 547 in October, 33 points above September's 514. Sales for the month were 66 points above October, 1949, when the index read 330.

Metal Prices
Jan. 2, 1951

COPPER, Conn. V., lb	$ .24½
LEAD, N. Y., lb	.17
ZINC, prime Western, E. St. Louis, lb	.17½
TIN, Straits qual, N. Y., lb	1.51
ALUMINUM, ingot, base price	.19
NICKEL, base price	.50½
STEEL, billets, Pitts., ton	56.00
STEEL, scrap, No. 1 heavy, Pitts., ton	46.50

Reliance Building Plant for Motor Manufacture

Reliance Electric & Engineering Co will expand its manufacturing facilities by construction of a $1.5-million plant in Euclid, Ohio. The one-story, 130,000-sq-ft building will be used for manufacture of industrial type electric motors and accessories and will house the company's engineering, development, research, and renewal parts department.

Occupancy is expected by the middle of next summer. Completion of the Euclid plant will permit a 100% increase, the company estimated, in production of electronic controls, adjustable speed V*S drives, and other electric motors and motor drives now being built in two smaller Reliance plants in the Cleveland area. These plants will be released to the adjoining Clark Controller Co.

MANUFACTURING BRIEFS

High-power electrical testing is demonstrated in a new sound-color movie titled "Electrical Proving Ground" recently released by Westinghouse Electric Corp. The 26-minute film shows testing of switchgear and other equipment at full power and voltage in Westinghouse's high-power laboratory at East Pittsburgh. It is available through district sales offices to power company groups, technical societies, civic organizations, and educational institutions for the cost of mailing.

Production of primary aluminum in the United States during October was about 2 million lb above the average monthly output during the third quarter of the year, the Aluminum Association reports. October production amounted to 125,830,495 lb, almost 6% above the September total of 118,898,418 lb.

General Electric Co plans a temporary layoff of 2,500 employees in the refrigerator division at its Erie, Pa., Works after Jan. 1. Similar layoffs

will be made in the locomotive and car equipment division. The decision was attributed to government restrictions on the use of essential raw materials—principally copper and aluminum.

A new National Production Authority order, M-17, says makers of three products used in radio and television receivers must provide as much as 15-50% of their output for defense orders. The products and ceilings are pressed and extruded steatite electrical ceramic products (insulating washers), 15%; electronic tubes, 50% on tube types produced by only one company and 25% on types made by more than one firm; fixed composition resistors, 25%. This is the first such NPA order for semi-finished or finished products.

Blue Seal Asbestos Corp, Brooklyn, N. Y., fabricator of insulating parts, has been purchased by Carl H. Krause, New York works manager for Trumbull Electric Manufacturing Co. Krause will function as president.

SALES ASSIGNMENTS

COMPANY STAFFS

Ansul Chemical Co, Marinette, Wis., has opened a new district office in Buffalo, N. Y., for its fire extinguisher division. Leslie J. Wiechers, formerly Ansul's Indianapolis manager, will head the Buffalo staff, assisted by Omar J. Lane and Charles Howson. The territory, the 17 western counties of New York, had been operated by Plant Equipment Corp, an Ansul distributor.

Allis-Chalmers Manufacturing Co, Milwaukee, Wis., has appointed Philip C. Neumann and William C. Campbell, Jr, sales representatives in the Pittsburgh district office.

Kerite Co, New York City, has made M. C. Blevins assistant Western district manager, with headquarters in Chicago.

REPRESENTATIVES

Memco Engineering & Manufacturing Co, Commach, L. I., N. Y., has appointed H. R. Koch Co, St. Louis, sales representative for Missouri, Kansas, Nebraska, and southern Illinois.

I-T-E Circuit Breaker Co, Philadelphia, and its subsidiary, Railway & Industrial Engineering Co, Greensburg, have appointed Central Station Engineering Co, Tucson, as Arizona representative. Clyde F. Lewis is general manager of Central Station.

W. N. Matthews Corp, St. Louis, has appointed W. E. Holiman Co, P. O. Box 851, Houston 1, Texas, sales representative in Louisiana and Mississippi.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Colorado—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, furnishing, del. f.o.b. cars shipping point or f.o.b. cars Walt Siding, governor with pumping equip, hydraulic turbine, at Pole Hill Power plant, governor and turbines at Flatiron Power Plant, Colorado-Big Thompson Proj., Spec. DS-3265. L. N. McClellan, ch. engr.

Illinois—Spoon River Electric Co-operative, Canton, 55 mi. rural distr. line and sys. imprvs., Fulton Co. **$285,000.**

Ind., Terre Haute—Public Service Co. of Indiana, Terminal Bldg., Indianapolis, 1 story garage and office, $600,000. Naess & Murphy, 80 E. Jackson St., Chicago, 4, Ill., archts.

Mississippi—Coahoma Electric Power Assn., Clarksdale, Projects Miss. 21, 75 mi. rural distr. lines, **$260,000.** Bowman & Bowman, Greenwood, consult. engrs.

Miss., Jackson—Dpt. Navy, Bureau Yards & Docks, P.O. Box 365, Naval Base, Charleston, S. C., underground electric service at Naval Reserve Training Center, NOY 21919, Spec. 24897.

N. Y., Auburn—General Electric Co., River Rd., Schenectady, factory, **$1,000,000.**

Oklahoma — Southwestern Power Admin., P.O. Drawer 1619, Tulsa, Zone 1, 154 kv switching station and connecting transmission lines, ISPA-369, Muskogee Co. $90,000. Plans deposit $10.

Oregon—Midstate Electric Co-operative, LaPine, 127 mi. rural distr. lines and sys. imprvs., Klamath Co. **$525,000.**

Texas—Concha Valley Electric Co-operative, San Angelo, 238 mi. rural distr. lines, Coke, Tom Green, Concho, Iron and Mitchell Counties. **$320,000.**

Tex., Earth—Southwestern Public Service Co., Mercantile Bank Bldg., electric power lines, Approx. **$85,000.**

Wash., Richland—General Electric Co. prime contractor to Atomic Energy Comn. for Hanford Works, frame Kadlec hospital addns. rein. con. fdns. Plans deposit $50.

Low Bidders & Contracts Awarded

California—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., Dec. 12, install generators at Folsom Power Plant, Central Valley Proj., Spec. DC-3204, from Westinghouse Electric Corp., G & E Bldg., Denver, Colo., **$2,525,000.**

Ill., Chicago—A. Finkle & Sons, 1338 Cortland St., Chicago, Zone 14, forge shop, mill adn., for electric furnaces and forging hammers, to E. L. Hallbauer Constr. Co., 1452 W. Belden St., Zone 14, **$500,000.** Bids 12/4, awarded 12/11.

Ill., Lemont—U. S. Atomic Energy Comn., Argonne National Laboratory, Downers Grove, Dec. 12, 2 story, brick, steel concrete technical bldg., offices, laboratory and machine shop, near here, from J. J. Duffy Constr. Co., 4994 Elston Ave., Chicago, Zone 30, **$515,820.**

Iowa, Clinton—Interstate Power Co., 1900 Main St., Dubuque. Owner builds, **$200,000,** natural gas pipe line to serve area in vicinity of Clinton.

Federal Engineering & Constr. Co., 1117 E. 47 St., Kansas City, Mo. Low Bidder. **$222,628.** Overhead line and sub-station installations, KANSAS CITY, KAN. Bd. P. Utilities, Burns & McDonnell Eng. Co., 95 and Troost Sts., Kansas City, Mo., engrs. Bids Nov. 29.

Ia., Davenport—Triple H. Constr. Co., Linton, Ind., Contract Awarded. **$163,453,** labor only, 556.3 mi. rural distr. lines, NEBRASKA, Niobrara Electric Membership Assn., Hay Springs, P. O. Burns, Davenport Bank Bldg., engr.

North Dakota — Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., construct 10,000 kva. Forman sub-stations, Missouri River Basin Proj., Transmission Div., Spec. R6-48 (Region 6), to Evans Electrical Constr. Co., 1617 Cuming St., Omaha, Neb., **$135,261.** Bids 10/17, awarded 12/6.

Sioux Falls, S. D.—Sioux Falls Constr. Co., 264 Boyce-Greeley Blk., Sioux Falls. Contract Awarded, **$6,000,000,** 10,000 sq. ft. power plant. Northern States Power Co., 15 S. 5 St., Minneapolis, Minn. Pioneer Engineering & Service Co., 208 S. La Salle St., Chicago 4, Ill., engrs.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Calif., Artesia—Bloomfield School Dist., 12120 Carson St., plans by K. S. Wing, 30 Linden Ave., Long Beach, school, near Pioneer and Norwalk Blvds., **$656,0000.**

Del., Wilmington — Wilmington Bd. Educ., plans by Victorine & Samuel Homsly, 927 Gilpin St., Wilmington, school. **$1,205,000.**

Fla., Jacksonville—Dpt. Navy, Bureau Yards & Docks Annex, Arlington, Va., expansion Naval fuel terminal and storage facilities and jet fuel bulk storage facilities. **$3,175,000.**

Ga., Augusta—State Dpt. P. Health, State Office Bldg., Atlanta, state hospital. **$3,000,000.**

G., Rome—Anchor Rome Mills, Rome, mill addn., Approx. **$1,000,000.**

Ill., Bedford Park—Mid-States Gummed Paper Co., Div. of Minnesota Mining & Mfg. Co., Harlem Ave. between 67 and 71 Sts., plant, 114 acres, **$4,000,000.**

Ill., Niles—United Drill & Tool Corp., plant, on 15 acres. **$1,750,000.**

Kan., Neodesha—Standard Oil Co., (Indiana), Neodesha, 9,000 bbl. refinery expansion. **$2,500,000.**

La., Franklin—Cabot Carbon Co., c/o Godfrey L. Cabot, Inc., 77 Franklin St., Boston, Mass., carbon black plant at Bayou Sale, St. Mary's Parish, near here, **$4,000,000.**

Mass., Cambridge—Massachusetts Institute of Technology, 77 Massachusetts Ave., plans by Eliel Saarinen, Bloomfield, Mich., auditorium, **$1,500,000.**

Miss., Greenville—City, 600,000 sq. ft. carpet plant. **$4,000,000.** Alexander Smith & Sons Carpet Co., Saw Mill River Rd., Yonkers, N. Y., lessee.

O., Marion—B. F. Goodrich Co., 500 S. Main St., Akron, 125,000 sq. ft. factory to make industrial rubber products. **$2,500,000.**

O., Vandalia—General Motors Corp., Aero-products Div., New Troy Pike, aircraft propeller plant. **$10,000,000.**

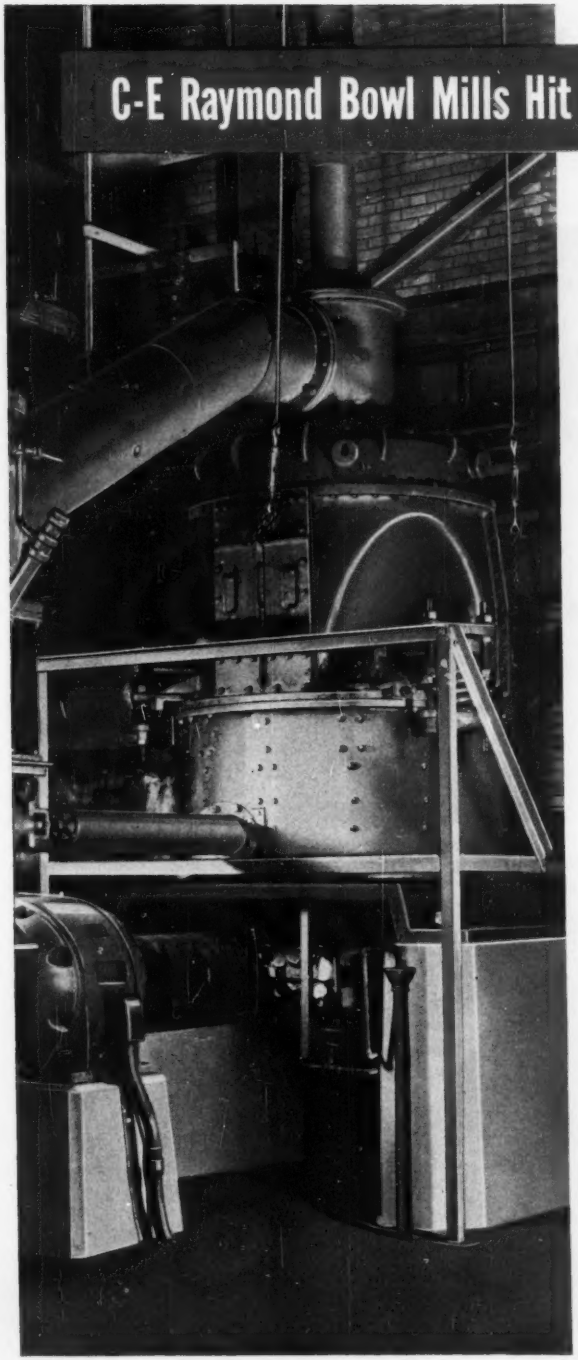
Tenn., Memphis—Baptist Memorial Hospital, 899 Madison Ave., 13 story, 250 bed hospital adn. $5,500,000. Samuel Hannaford & Sons, Dixie Terminal Bldg., Cincinnati, O., and Walk C. Jones-Walk C. Jones, Jr., 1215 Poplar Ave., archts.

Tex., Houston—Cameron Iron Wks. Inc., Katy and Silber Rds., tool and die shop expansion **$1,150,000;** forge shop expansion **$1,500,000;** drop hammer shop expansion **$300,000;** general plant overhauling, remodeling, **$450,000;** heat treatment plant expansion **$850,000;** shop expansion for rough machinery, **$700,000.** Lockwood & Andrews, City Natl. Bank Bldg., consult. engrs.

Low Bidders & Contracts Awarded

Ohio, Dayton—Abco Constr. Co., Commercial Bldg., Dayton, Contract Awarded. Approx. **$2,000,000,** shopping center, known as East Town Shopping Center, 3 main bldgs. with more than 165,000 sq. ft. floor space. 15 acre tract on Xenia Pike half mile east of Smithville Rd. Arthur Beerman, Commercial Bldg.

C-E Raymond Bowl Mills Hit New High in 1950



ordered for 5,000,000 kw of new electric generating capacity

Perhaps an even more impressive indication of Bowl Mill acceptance throughout the utility industry is the fact that . . .

> . . . if all Bowl Mills purchased by American utility companies from January 1 to December 31, 1950, were to operate at 70% use capacity factor for a year, they would pulverize a total of
>
> **20 million tons of coal —**
>
> that's about ¼ of the amount of coal used by all utility companies in 1949.

No one factor could possibly account for this widespread acceptance. Rather it is the fact that the Bowl Mill's record of performance in hundreds of installations has been *outstanding* in *all* these important respects . . .

- **power consumption**
- **maintenance costs**
- **control characteristics**
- **ability to maintain capacity with wet coal**
- **ability to maintain fineness through life of grinding elements**
- **quiet vibrationless operation**

Check the facts of Bowl Mill performance on *all* these counts and you will understand why utility engineers continue to accord it such widespread preference. B-457

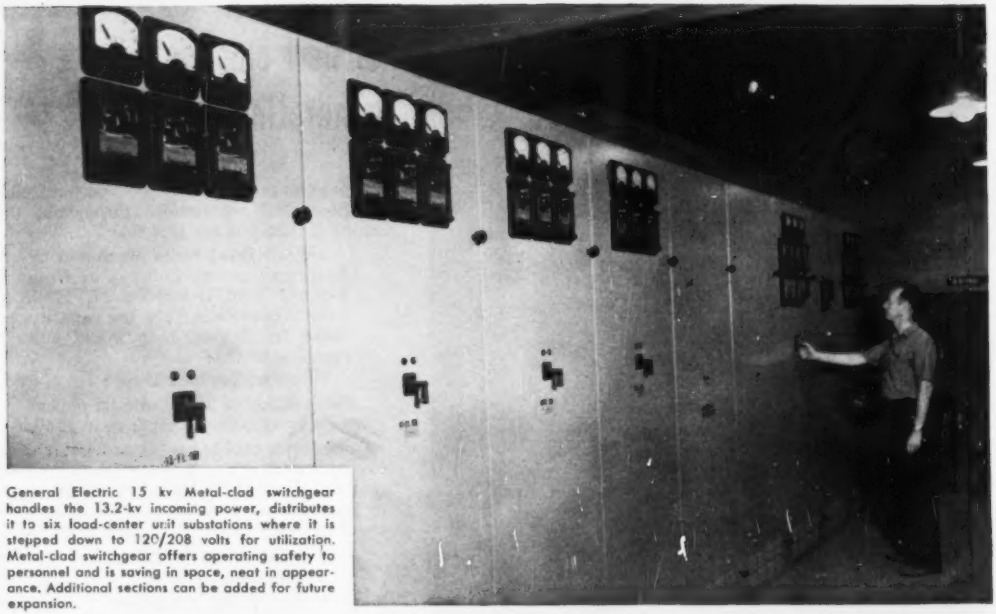
C-E

COMBUSTION ENGINEERING-SUPERHEATER, INC.

200 Madison Avenue • New York 16, N. Y.

ALL TYPES OF BOILERS, FURNACES, PULVERIZED FUEL SYSTEMS AND STOKERS; ALSO SUPERHEATERS, ECONOMIZERS AND AIR HEATERS

METAL CLAD SWITCHGEAR

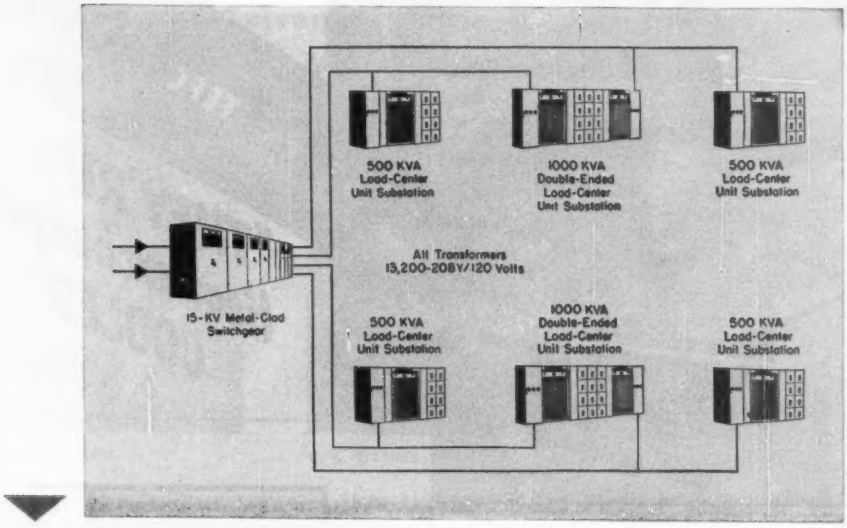


General Electric 15 kv Metal-clad switchgear handles the 13.2-kv incoming power, distributes it to six load-center unit substations where it is stepped down to 120/208 volts for utilization. Metal-clad switchgear offers operating safety to personnel and is saving in space, neat in appearance. Additional sections can be added for future expansion.

Load-center unit substations receive 13.2 kv power and step it down to 120/208 volts for utilization. Air switches on primary are easy to operate, blades are easy to see. Note entire load-center is metal-enclosed thus offering operating safety to personnel.

Low-voltage end of load-center unit substation showing air circuit breakers that have plenty of "IC" (Interrupting Capacity) to handle all short circuits. Breakers are of the drawout type, easily removable for inspection or maintenance.

HELPS PROTECT SERVICE AT TELEPHONE COMPANY INSTALLATION



In this installation General Electric Metal-clad switchgear receives the incoming 13.2 kv power and distributes it to six G-E load-center unit substations. Three load-centers, two single-ended units rated 500 kva and one double-ended rated 1000 kva, are located in the basement. Three other units of identical rating are on an upper floor. From these load-centers utilization circuits feed 208/120-volt power both upwards and down, and provide efficient, low-cost power at constant voltage wherever desired.

This installation is a complete General Electric project —one source of responsibility plus the very best in coordinated planning, engineering, manufacturing, and service facilities to give maximum savings and efficiency to the customer.

Be sure to see the "More Power to America" full-color sound slidefilm "Modern Industrial Power Distribution." Ask your G-E sales representative to arrange a showing for your organization.

MODERN INDUSTRIAL power distribution systems using G-E switchgear are applicable to any industrial plant or commercial building where you want proper voltage for top performance of equipment, an extremely flexible setup to take care of expanding or changing loads, adequate short circuit protection, safety to personnel, and low installation and maintenance costs.

INVESTIGATE TODAY the many advantages of using General Electric switchgear in *your* plant for efficient, flexible power distribution. Contact your G-E sales representative for further information—or write for the helpful bulletins listed below. *Apparatus Department, General Electric Company, Schenectady 5, New York.*

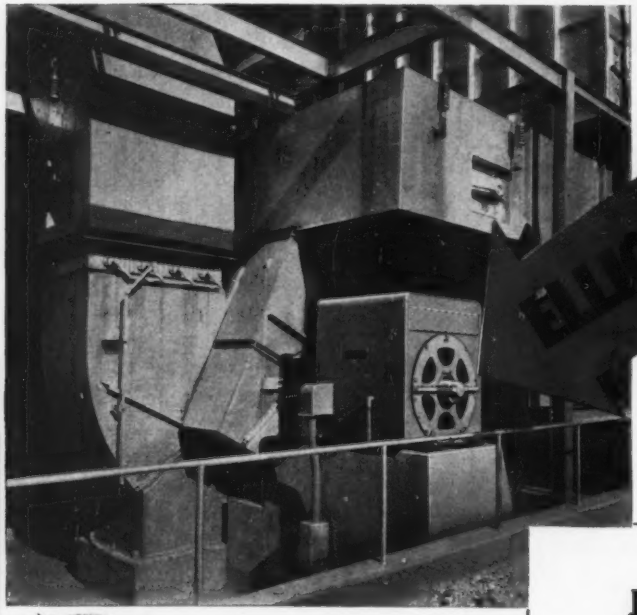
GEA-3083 Metal-clad Switchgear
GEA-4966 Low-voltage Metal-enclosed Switchgear
GEA-3592 Load-center Unit Substations
GEA-3758 Load-center Power Distribution

GENERAL ELECTRIC

860-40

Northern semi-outdoor power station installs ELLIOTT TEFC MOTORS

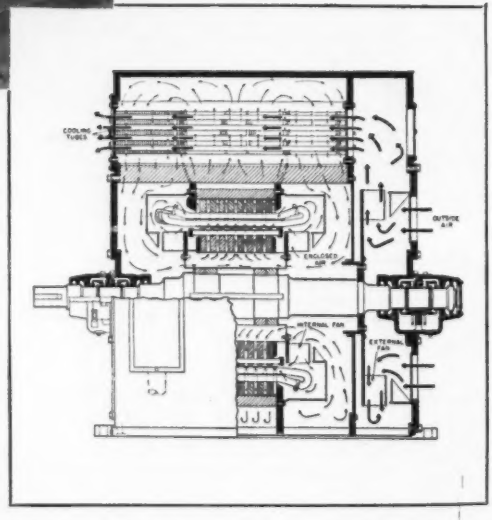
"THEY'RE Heat exchanger COOLED"



ANOTHER "FARTHEST NORTH" is reached in semi-outdoor power installations, with the new West Penn Power Company station at Milesburg, in central Pennsylvania. To aid in neutralizing the effects of contaminated cooling air in this bituminous coal area, as well as the weather, this station used Elliott TEFC motors to drive the two induced-draft fans. These new design motors (one of which is shown in the photo above) are completely sealed against outside air, and

a) Protect windings from fly-ash, dirt, etc.
b) Insure complete weather protection.
c) Permit of easy cleaning of the cooling system without stopping motor.
d) Provide the crack-proof strength and rigidity of Elliott Fabri-steel construction, with rust-inhibiting finish.

Write for full details on these new Elliott heat-exchanger-cooled TEFC motors.



The motor is cooled by the fan-driven circulation of internal air around and over finned tubes in the heat exchanger. The outside air enters the front of the motor frame around one of the bearings, is driven by centrifugal fan up to and through the heat exchanger tube bank. This air is entirely excluded from the motor itself. The heat exchanger is located at the top of the unit, and thus does not affect standard base-to-shaft center dimension.

ELLIOTT COMPANY

DEPT. EN, RIDGWAY, PENNSYLVANIA

PLANTS AT
JEANNETTE, PA. • RIDGWAY, PA. • ANNLEE, N.J. • SPRINGFIELD, O. • NEWARK, N.J.
DISTRICT OFFICES IN PRINCIPAL CITIES

NEWS ABOUT PEOPLE

4 Executives of Sylvania Electric Are Advanced to Vice Presidencies

A. L. CHAPMAN

C. C. HAINES

Sylvania Electric Products, Inc., has named four of its executives to be vice presidents.

Those named are Arthur L. Chapman, general manager of the radio and television division and the parts division; Curtis A. Haines, general manager of operations of the radio tube and television picture tube divisions; John B. Merrill, general manager of the tungsten and chemical division; and Howard L. Richardson, director of industrial relations.

Chapman has been with Sylvania since 1933 when he joined the radio tube material inspection department. In 1942 he became general foreman of the Emporium radio tube plant and the following year was named superintendent of the company's wire and weld plant at Warren, Pa.

He became manager of the Warren plant in 1944. Earlier this year Chapman was appointed general manager of the parts, wire, and plastics division and of the radio and television division at Buffalo.

Haines joined Sylvania in 1929 as a member of the factory radio tube engineering staff at Salem, Mass. He became manufacturing superintendent for the firm's Salem radio tube plant in 1941. Five years later Haines was named president of the Wabash Corp when it became a wholly owned subsidiary of Sylvania and in 1949 was appointed general manager of the photoflash division when Wabash was absorbed into the parent company.

Merrill has been with Sylvania since 1941 when the company purchased the fluorescent powder division of the Patterson Screen Co. He became plant manager at Towanda in 1943 and two years later was appointed general manager of the newly created tungsten and chemical division.

Richardson went to Sylvania in 1933 as an engineer in the quality department of the firm's lamp plant at Salem. He was later placed in charge of quality control for the lighting division. In 1941 he became manager of employment and training in Sylvania's industrial relations department and was named director of industrial relations late in 1945.

J. B. MERRILL

H. L. RICHARDSON

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Cordiner New President of General Electric Co

(See Front Cover)

New president of General Electric Co is Ralph J. Cordiner, who has been executive vice president and a director since 1949. He succeeds Charles E. Wilson, who resigned to head the Office of Defense Mobilization.

Cordiner worked his way through Whitman College, Walla Walla, Wash., by selling electric appliances for Pacific Power & Light Co. After his graduation in 1922 he was made commercial manager of a division of the utility. The same year he moved to Edison General Electric Appliance Co, Portland. Five years later he became Northwest manager in Portland and in 1930 Pacific Coast division manager in San Francisco.

When the heating device section of Edison GE was transferred from Chicago and consolidated with General Electric's Appliance and Merchandise Department at Bridgeport in 1932, Cordiner went with the section as manager and chairman of the management

committee. Two years later he was appointed assistant manager of appliance sales and in 1935 manager of the radio division.

Cordiner was named assistant manager of the Appliance and Merchandise Department in 1936, and two years later he succeeded Wilson as manager of the department. He resigned in 1939 to become president of Schick, Inc, Stamford, Conn. In 1942 he entered government service as director general of war production scheduling and vice chairman of the War Production Board. He rejoined GE in July, 1943, as assistant to the president.

Cordiner is a director of Carboloy Co, Inc; Edison GE Appliance Co, Inc; GE X-Ray Corp; Locke Insulator Corp; Monowatt Electric Corp; Trumbull Electric Manufacturing Co; Warren Telechron Co; GE Credit Corp; and GE Supply Corp.

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W. H. Smith has been appointed executive vice president of Abitibi Power & Paper Co, Ltd, Iroquois Falls, Ont. New vice presidents are C. B. Davis, in charge of the Woodlands plant, and R. J. Askin, manufacturing vice president.

Edward M. Naughton has been appointed assistant general manager of Utah Power & Light Co. D. D. Moffatt, Jr, has been named assistant to the vice president and E. Allan Hunter staff engineer. Naughton spent 10 years with Texas Power & Light Co before joining UP&L in 1935. With the latter company he was first superintendent of steam-electric generating plants and later assistant to the vice president.

John Stanford, for the past three years assistant in vocational education at the University of Kentucky, has been appointed director of information for the Kentucky Rural Electric Cooperatives Corp, Louisville. He will be assisted by Jack Light. Stanford succeeds Seth Thompson who has resigned.

Daniel Read, secretary-treasurer of East Bay Municipal Utility District, Oakland, Calif., has retired as treasurer after 27 years of service to the district. He retains the offices of secretary and manager of the district's commercial division.

Graybar Electric Makes Henges Vice President

W. E. Henges has been appointed vice president of Gaybar Electric Co. He will continue as assistant to the president, a post to which he was appointed last September.

Henges has been with Graybar since 1913 when he started as a receiving clerk at St. Louis. He became a salesman in 1919 and assistant manager in 1936.

Six years later he was made district manager at St. Louis. In 1944 he was transferred to Cleveland in the same capacity. He has been a member of the company's board of directors since March, 1949. While in Cleveland he served as president of the Electrical League of Cleveland.

W. E. HENGES

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Merrill Chitty has resigned as head of the Chugach Electric Association at Anchorage, Alaska, after having held the position since Aug. 15.

Adam J. Althouse, assistant to the president of Metropolitan Edison Co, Reading, Pa., has retired after 43 years of service in the industry. In 1908, after two years' experience with other companies, Althouse became superintendent of Birdsboro Electric Co, which later became part of the Metropolitan system. In 1924 he served on a committee of three appointed by Pennsylvania Electric Association to study methods of distribution and rural extension of Ontario Hydro Commission. Their report later was used in determining rural distribution line policies of Pennsylvania's electric companies. He served on the executive committee of PEA and was elected vice president and in 1935 president. He was chairman of the Lehigh Valley section of AIEE and now is a life member.

Charles J. Allen and **Emil J. Amberg** are retiring as vice presidents of Connecticut Light & Power Co, Waterbury. Allen joined the company in 1917 as office manager and later served as auditor, executive assistant, assistant secretary, and assistant treasurer. In 1929 he was made manager of the western division with headquarters at Waterbury and 10 years later became director of public relations. He was elected a vice president in 1946. He is a past president of the Public Utilities Advertising Association. Amberg, a native of Switzerland who came to this country in 1908, also joined the company in 1917. He worked for Baldwin Locomotive Works, was in hydroelectric development in Pennsylvania, and had charge of electrification design and reconstruction on the Stamford-New York section of the New York, New Haven & Hartford Railroad before going to Connecticut Light & Power. With the utility he has been electrical and then research engineer and has specialized in system development and economic analyses. He has been a vice president since 1946.

Dr Eugene C. Crittenden, associate director of the National Bureau of Standards since 1946, has retired after more than 41 years of service at the bureau. He is known for his achievements in measurements and standardization of light and his contribution to the establishment of absolute electrical units based on the fundamental units of length, mass, and time, recently adopted on a worldwide basis. Crittenden joined the bureau in 1909 as an assistant physicist in the Photometric Laboratory. He was chief of the electrical division for 25 years. In 1933 he was made assistant director and became responsible for the overall research activities of the bureau. Crittenden is the American member of the International Committee on Weights and Measures and an honorary life member in the U. S. National Committee of the International Commission on Illumination. He has been awarded the gold medal of the Illuminating Engineering Society and the Department of Commerce's gold medal award for exceptional service.

NEW EQUIPMENT

Suspension Clamps

Described as "corona free", a new-type transmission line suspension clamp has a "skirt" designed to shield the vulnerable portions from the electrostatic field set up by high voltage. This design is aimed at reducing radio interference. The clamps are non-magnetic—made of aluminum—to prevent power line electrical losses, the company states.

The design project was assisted by suggestions of Bonneville Power Administration engineers. Initial use of the clamps will be made by BPA.

Boeing Airplane Co, Acoustics and Electrical Unit, Seattle 14, Wash.

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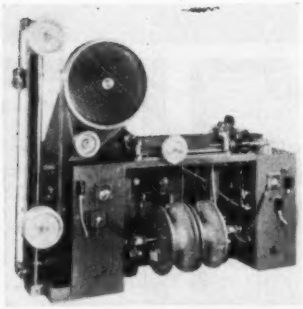

Dual Take-up Reel

For plastic or rubber-coated wire, cord or cable, a new constant-tension, dual-reel continuous extrusion takeup unit has integral capstan and tension stand. Speed range extends to more than 2,600 fpm. Acceleration of the empty reel to synchronous wire speed is instantaneous as soon as crossover is made. Manufacturer reports no interruption or slow down in the winding process is necessary to shift from full to empty reel.

All drives are hydraulic and self-contained with fully enclosed, oil-immersed gears. Hydraulically driven traverse provides a 25 to 1 lay range. Provision has been made for "ends out" winding. Entire unit is an integrated "package" ready for connection to the power line.

Industrial Ovens, Inc, 13825 Triskett Rd, Cleveland 11, Ohio

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Protective Coatings

A new baking-type coating intermediate is described by the manufacturer as a new concept in coating materials. Designated as R-108, and reportedly combining chemical resistance with flexibility and heat resistance, it is compatible with a variety of coating resins and may be pigmented. Unusual resistance is shown to alkalies, acids, oxidizing agents, solvents, salts, and other corrosive chemicals aver a wide temperature range.

General Electric Co, Chemical Dept, Pittsfield, Mass.

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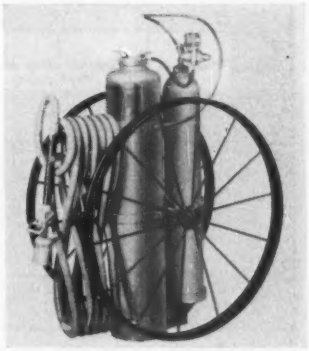
Dry Chemical Extinguisher

A wheeled dry-chemical fire extinguisher with 150-lb powder capacity is for use in combating flammable liquid and electrical fires on utility properties and in industrial plants, garages, and refineries.

Two large upright steel cylinders, balanced to permit one-man mobility, are mounted on two wheels. The larger cylinder contains 150 lb of fire-smothering dry chemical, the smaller one holds nitrogen under about 2,000 psi. The dry chemical is pressurized for discharge when a valve on top of the nitrogen cylinder is opened. Discharge nozzle at the end of a 50-ft hose has a stirrup-type control lever with three positions: Off, fan, and straight to control the powder stream.



Walter Kidde & Co, Inc, 40 E. 34th St, New York 16, N. Y.

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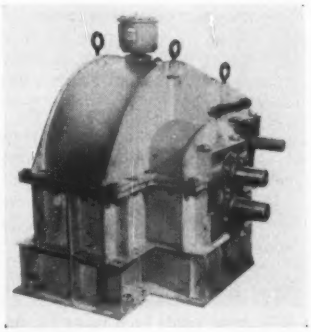
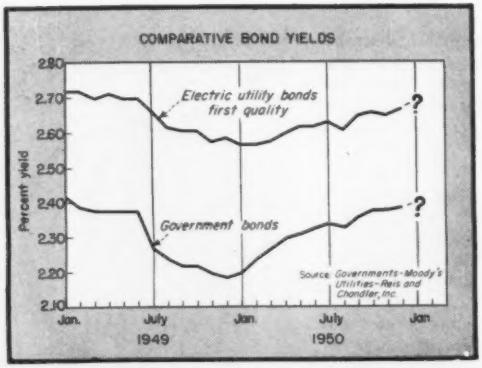


Gear Units

Combined speed reducers and mill pinion stands have been designed to drive small to medium-size rolling mills. Gearing is standard AGMA hobbed helical type with a high helix angle for smooth operation and less vibration at higher speeds. Lubrication is by means of a positive splash system, or forced-feed system if needed. Four different size units are available, meant to be powered by 25, 50, 100, and 150-hp motors.

Westinghouse Electric Corp, P. O. Box 2099, Pittsburgh 30, Pa.

Electrical Business Outlook



UP WENT yields on top-grade utility bonds through 1950

What Will New Money Cost?

Money costs in 1951 will be pretty much a matter of government bond yields. Wall Street hasn't shown much interest in utility stocks lately. But the industry must raise large amounts of money to finance construction and that means bond issues—lots of them.

A year ago, many power companies had already borrowed the money for 1950 construction at the low rates prevailing late in 1949. And the market for utility stocks was perking up. When interest rates began rising, fewer bonds were issued.

But mobilization has changed the outlook. Now construction is increasing, instead of levelling-off. Power company common stocks are somewhat out of favor because investors fear high taxes will cut earning power. So large quantities of bonds must be issued even if required yields are high.

Why Have Yields Been Rising?

Why have yields been rising for the past year? It's partly lack of buyers. Insurance companies, the biggest customers for utility bonds, have preferred to invest in high-yield mortgages, made plentiful by the housing boom. That's also true of savings banks. And commercial banks have put more money into business loans, less into bonds.

Federal Reserve policy has also been partly responsible for rising yields. Since Korea the board has been trying to check inflation by making it harder to borrow. It has forced up short-term interest rates by selling short-term government securities. And it has raised bank reserve requirements by approximately $12 billion.

These steps have made investors nervous about longer term bonds. If banks must hold more cash in reserve, they will not be able to maintain their present investment in long-term governments. And if short-term interest rates keep going up, won't long-term rates rise too? Yields on utility bonds move with those of the government (chart).

The War Scare Further Weakened Bond Market

The war scare has weakened the bond market still further. Many individuals and trustees have shifted from bonds to the common stocks of manufacturing and mining companies. They figure this is the only way to keep up with inflation.

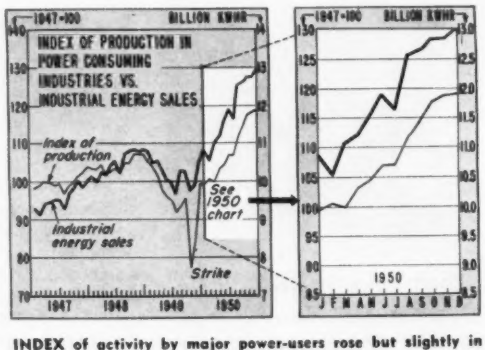
You can guess the trend of the 1951 bond market if you can answer these two questions:

1. What will the insurance companies do? Enough new homes got started before Regulation X to keep mortgage financing heavy until spring. After that, insurance companies will need more bonds for their portfolios. But there will also be more new bond issues. Will the insurance companies want a higher rate?

2. What will the Federal Reserve do? There's some evidence that bank loans are rising less rapidly. If inflation slows up, there may be no further rise in bank reserve requirements. This would help the bond market. On the other hand, if inflation gets worse, the Federal Reserve will probably raise reserve requirements and prod the Treasury to set higher interest rates on its borrowings. This would tighten the private money market.

But the Real Decision Will Come in Spring

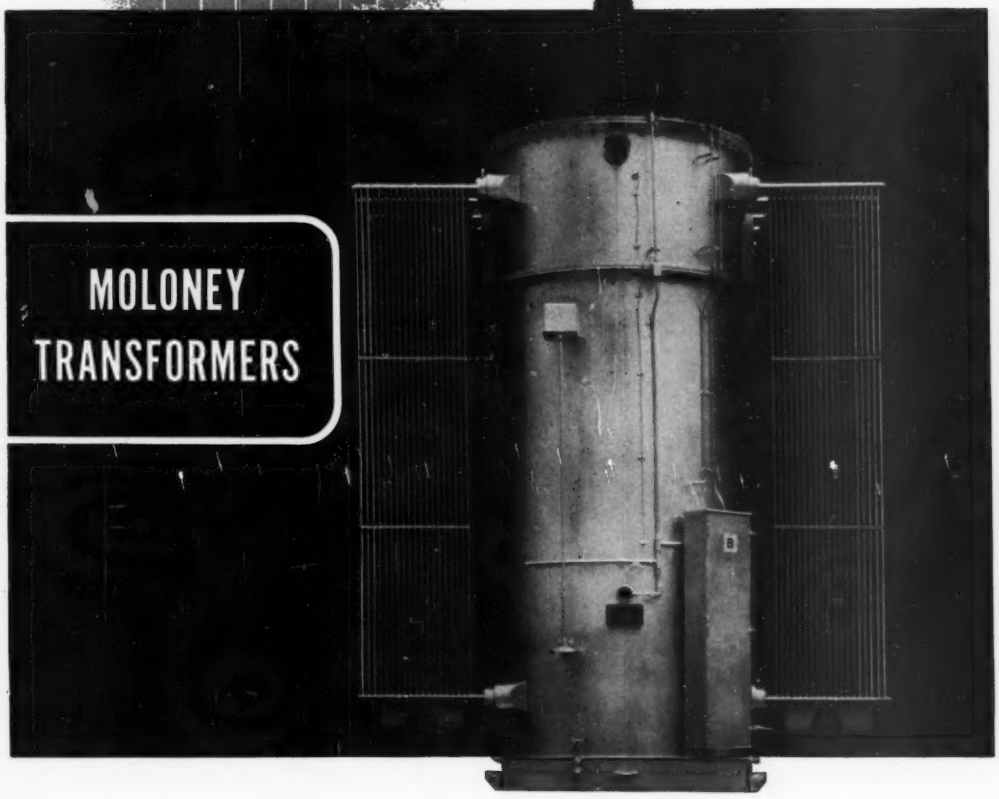
The real decision will come this spring when the Treasury will probably float a long term bond issue. If the Federal Reserve Board and the Treasury agree on more anti-inflation medicine, the yield on this new issue will be higher than on existing bonds. The recent increase in reserve requirements of member banks is an indication of current FRB thinking. These factors will surely affect the cost of new utility financing.



INDEX of activity by major power-users rose but slightly in November, but December estimate indicates a big gain

An Important Consideration

in the reduction of operating and maintenance costs . . .



There is no doubt about it . . . the path to profit lies in reduction of maintenance and operating costs. For the industry as a whole this figure represents 15% of each revenue dollar. Moloney Transformers can help you cut these costs because of:

- Superiority of design that ensures high surge strength and thermal overload capacity.
- Better mechanical features which reduce maintenance operations.
- Long, trouble-free operation due to fabrication by skilled workmen, use of quality materials, and careful processing.

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⅝% STEP REGULATOR

WHY LOSE
$400 to $1600
PER YEAR
PER FEEDER

SLASH REVENUE LOSSES

ON LINES WITH SO-CALLED ADEQUATE VOLTAGE!

OPERATORS ARE LOSING $4 to $8 per customer each year on lines with so called "adequate" voltages of 105 to 110 V. And your customer is losing too! Motor life is shortened . . . light bulb efficiency is low . . . heating is slow. Users are losing money whether they know it or not.

And operators are losing money too! Low voltage means consumption is lower than it should be . . . hence revenue is lower than it need be. It costs money not to regulate voltage.

Regulators are a common method of raising voltage and cutting revenue losses. But there's a big difference in regulators. Judge a regulator by the band width it holds.

A regulator that holds a narrow 2-volt band can maintain average voltage 1 volt higher than a regulator holding a 4-volt band. That's the band width advantage! Only Allis-Chalmers builds a pole-type step regulator that can hold a 2-volt band.

You can use the band width advantage in any of three ways:

1. You can increase revenue.
2. You can increase load carrying capacity.
3. You can extend feeder length.

Low voltage is practically a universal problem. Every day you wait to correct it you are losing money that can never be reclaimed. Call your nearby Allis-Chalmers Sales Office now for the complete story on what regulators can do for you.

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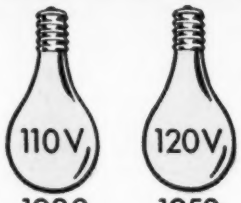
"Adequate" Voltage Isn't What It Was!



Today light bulbs and most appliances are rated 115 or 120V. Users and operators both suffer when voltage is lower than this. Good voltage is good for everyone.

-3180

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